

A NEW Orchard and Garden,

Or

The best way for planting, grafting, and to make
any ground good, for a rich Orchard: Particularly in the North,
and generally for the whole kingdome of England, as in nature,
reason, situation, and all probability, may and doth appeare.

With the Country Housewives Garden for hearbes of common use,
their vertues, seasons, profits, ornaments, variety of knots, models
for trees, and plots for the best ordering of Grounds and Walkes.

As also the Husbandry of Bees, with their severall uses and annoy-
ances, all being the experience of 48. yeares labour, and now the third
time corrected and much enlarg'd, by *William Lawson.*

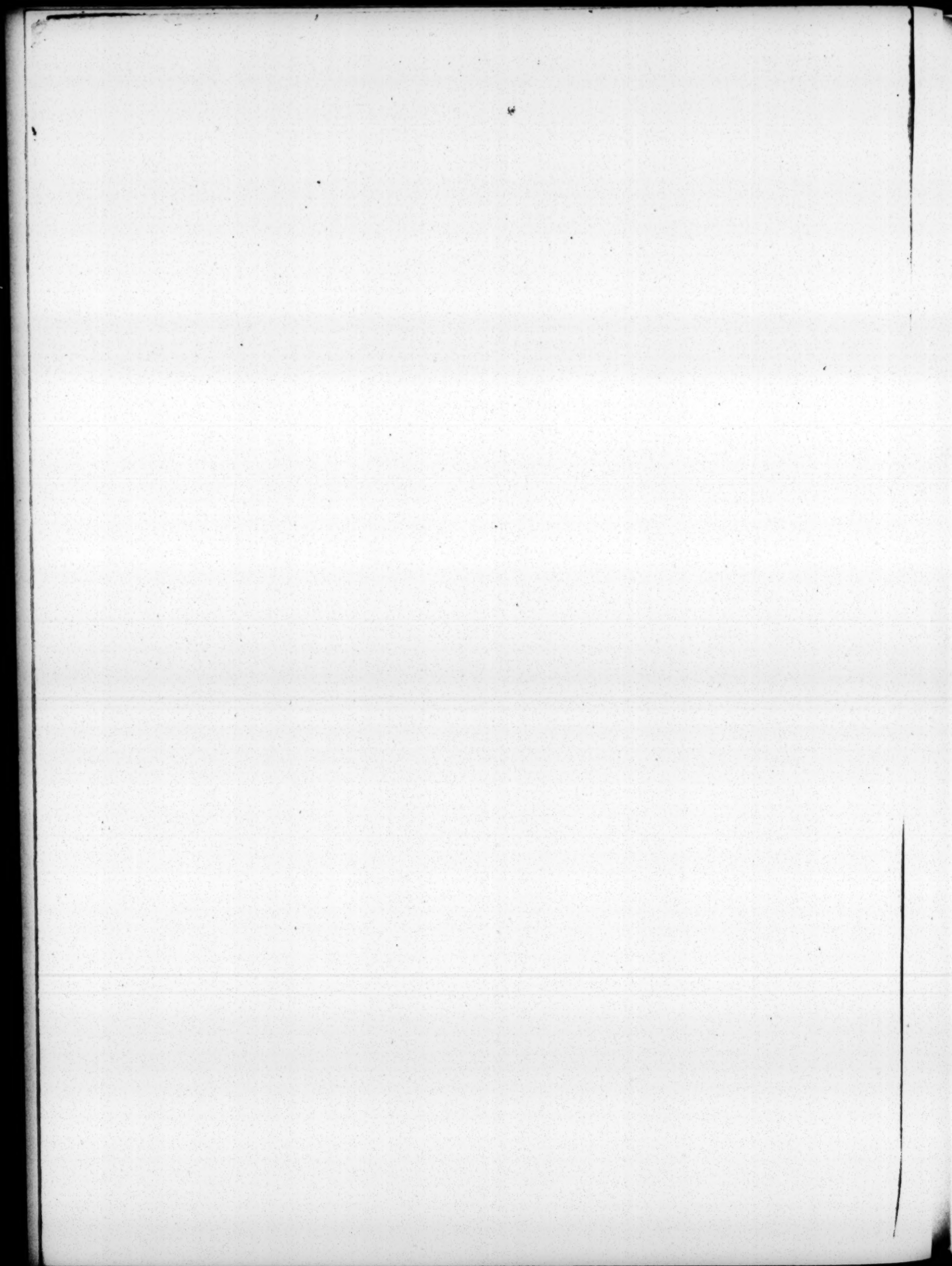
Whereunto is newly added the Art of propagating Plants, with the true
ordering of all manner of Fruits, in their gathering, carrying home, and preservation.

Skill and paines bring forth full gaines.



Nemo sibi vult.

London, Printed by Edward Gijfford for John Harrison, at the golden
Vulcane in Paternoster-row. 1638.





TO THE RIGHT WORSHIPFULL

Sir Henry Beloffes

Knight and Baronet.

Worthy Sir,



When in many yeares by long experience I had furnished this my Northerne Orchard and Country Garden with needfull plants and usefull herbes, I did impart the view thereof to my friends, who resorted to me to conferre in matters of that nature, they did see it, and seeing it desired, and I must not now denie the publishing of it (which then I allotted to my private delight) for the publike profit of others. Wherefore, though I could plead custome the ordinary excuse of all Writers, to chuse a Patron and Protector of their Workes, and so shroud my selfe from scandall under your honourable favour, yet have I certaine reasons to excuse this my presumption: First, the many curtesies you have vouchsafed me. Secondly, your delightfull skill in matters of this nature. Thirdly, the pro-

The Epistle Dedicatory.

fit which I received from your learned discourse of fruit-trees.

Fourthly, your animating and assisting of others to such endeavours. Last of all, the rare work of your owne in this kind, all which to publish under your protection, I have adventured (as you see) Vouchsafe it therefore entertainment, I pray you, and I hope you shall finde it not the unprofitablest servant of your retinue: for when your serious imployments are overpassed, it may interpolate some commodity, and raise your contentment out of variety.

Your worships most bounden,

William Lawson.



The Preface to all well minded.



Art hath her first originall out of experience, which therefore is called the Schoole-mistresse of fooles, because she teacheth infallibly, and plainly, as drawing her knowledge out of the course of Nature (which never failes in the generall) by the senses, feelingly apprehending, and comparing (with the helpe of the minde) the workes of nature; and as in all other things naturall so especially in Trees: for what is Art more then a provident and skillfull Collectedrix of the faults of Nature in particular workes, apprehended by the senses? As when good ground naturally brings forth thistles, trees stand too thicke, or too thin, or disorderly, or (without dressing) put forth unprofitable suckers, and such like. All which and a thousand more, Art reformeth, being taught by experience: and therefore must wee count that Art the surest, that stands upon experimentall rules, gathered by the rule of reason (not conceit) of all other rules the surest.

Whereupon have I of my meere & sole experience, without respect to any former written treatise gathered the rules & set them downe in writing not daring to hide the least talent given me of my Lord and Master in Heaven: neither is this injurious to any, though I differ from the common opinion

The Preface.

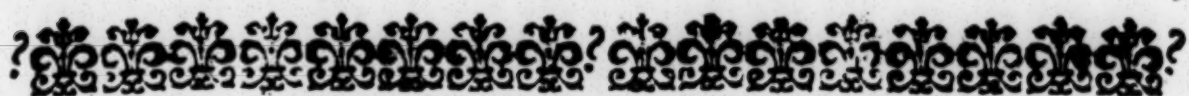
in divers points, to make it knowne to others, what good I have found out in this faculty by long triall and experience. I confesse freely my want of curious skill in the Art of planting. And I admire and praise Plinie, Aristotle, Virgil, Cicero, and many others for wit and judgment in this kind, and leave them to their times, manner, and severall Countries.

I am not determined (neither can I worthily) to set forth the praises of this Art: how some, and not a few, even of the best, have accounted it a chiefe part of earthly happinesse, to have faire and pleasant Orchards, as in Hesperia and Thes-saly, how all with one consent agree, that it is a chiefe part of husbandry (as Tully de senectute) and Husbandry main-taines the world; how ancient, how, profitable, how pleasant it is, how many secrets of nature it doth containe, how loved, how much practised in the best places, and of the best: This hath already beene done by many. I only aime at the common good. I delight not in curious conceits, as planting and graf-fing with the roote upwards, inoculating Roses on Thornes, and such like, although I have heard of divers, proved some, and read of more.

The Stationer hath (as being most desirous with mee, to further the common good) bestowed much cost and care in having the knots and models by the best Artizan cut in great variety, that nothing might bee any way wanting to satisfie the curious desire of those that would make use of this Booke.

And I shew a plaine and sure way of planting, which I have found good by 48. yeeres (and moe) experience in the North part of England: I prejudicate and envie none, wishing yet all to abstaine from maligning that good (to them unknown) which is well intended. Farewell.

Thine, for thy good, W.L.



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THE BEST, SVRE AND READIEST WAY

to make a good Orchard and Garden.

CHAPTER. I.

Of the Gardener, and his Wages.

WHosoever desireth and endeavoreth to have a pleasant, and profitable Orchard, must (if he be able) provide himselfe of a Fructerer, religious, honest, skilful in that faculty, & therewithall painfull: By religious, I meane (because many think religion but a fashion or custome to go to Church) maintaining, & cherishing things religious: as Schools of learning Churches, Tythes, Church-goods, & rights; and above all things, Gods word, & the Preachers thereof, so much as he is able, practising prayers, comfortable conference, mutuall instruction to edifie, almes, and other workes of Charity, & all out of a good conscience.

Honesty in a Gardener, wil grace your Garden, and all your house, and helpe to stay unbridled Servingmen, giving offence to none, not calling your name into question by dishonest acts, nor infecting your family by evill counsell or example. For there is no plague so infectious as Popery and knavery, he will not purloine your profit, nor hinder your pleasures.

Concerning his skill, he must not be a Scolist, to make shew or take in hand that, which he cannot performe, especially in so weighty a thing as an Orchard:

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B. than

than the which, there can be no humane thing more excellent, either for pleasure or profit, as shall (God willing) be proved in the treatise following. And what an hinderance shall it be, not onely to the owner, but to the common good, that the unspeakeable benefit of many hundred yeeres shall be lost, by the audacious attempt of an unskillfull Arborist.

Painefull.

The Gardener had not need be an idle, or lazie Lubber, for so your Orchard being a matter of such moment, will not prosper. There will ever be something to doe. Weeds are alwaies growing. The great mother of all living Creatures, the Earth, is full of feed in her bowels, and any stirring gives them heat of Sun, and being laid neere day, they grow: Mowles worke daily, though not alwaies a like. Winter herbes at all times will grow (except in extreame frost.) In Winter your young trees and hearbs would be lightned of snow, and your Allyes cleansed: drifts of snow will set Deere, Hares, and Conyes, and other noysome beasts over your walls & hedges, into your Orchard. When Summer cloathes your borders with greene and peckled colours, your Gardener must dresse his hedges, and antike workes: watch his Bees, and hive them: distill his Roses and other herbes. Now begins Summer Fruit to ripe, and crave your hand to pull them. If he have a Garden (as he must need) to keepe, you must needs allow him good helpe, to end his labours which are endlesse, for no one man is sufficient for these things.

Wages.


Such a Gardener as will conscionably, quietly and patiently travell in your Orchard, God shall crowne the labours of his hands with ioyfulnesse, and make the clouds drop fatnesse upon your trees, he will provoke your love, and earne his wages, and fees belonging to his

his place: The house being served, fallen fruite, superfluity of herbs, and flowers, seedes, graffes, sets, and besides other offall, that fruit which your bountiful hand shall reward him withall, will much augment his wages, and the profit of your bees will pay you backe againe.

If you be not able, nor willing to hire a gardner, keep your profits to your selfe, but then you must take al the pains: And for that purpose (if you want this faculty) to instruct you, have I undertaken these labours, & gathered these rules, but chiefly respecting my Countreies good.

CHAP. II.

Of the soile.

 Ruit-trees most common, and meetest for our Northerne Countreies: (as Apples, Peares, Cherries, Filberds, red and white Plummes, Damsons, and Bulles,) for we Kinds of trees. meddle not with Apricockes nor Peaches, nor scarcely with Quinces, which will not like in our cold parts, unlesse they be helped with some reflex of Sunne, or other like meanes, nor with bushes, bearing berries, as Barberies, Goose-berries, or Grosers, Raspe-berries, and such like, though the Barbery be wholsome, and the tree may be made great: doe require (as all other trees doe) a blacke, fat, mellow, cleane and well tempered soyle, wherein they may gather plenty of good sap. Some think the Hasell would have a chanily rocke, and the fallow, and eller a waterish marish. The soile is made better by delving, and Soyle. other meanes, being well melted, and the wildnesse of the earth and weedes (for every thing subject to man, and serving his use (not well ordered, is by nature sub-

iect to the curse,) is killed by frosts and drought, by tal-
lowing and laying on heapes, and if it be wild earth,
with burning.

Barren earth.

If your ground be barren (for some are forced to
make an Orchard of barren ground) make a pit three
quarters deepe, and two yards wide, and round in such
places, where you would set your trees, and fill the same
with fat, pure, and mellow earth, one whole foot higher
then your Soile, and therein set your Plant. For who is
able to manure an whole Orchard plot, if it be barren?
But if you determine to manure the whole site, this is
your way: digge a trench halfe a yard deepe, all along
the lower (if there be a lower) side of your Orchard
plot, casting up all the earth on the inner side, and fill
the same with good short, hot, & tender muck, & make
such another Trench, and fill the same as the first, and
so the third, and so throughout your ground. And by
this means your plot shal be fertile for your life. But be
sure you set your trees, neither in dung nor barren earth

Plaine.

Your ground must be plaine, that it may receive, and
keep moysture, not onely the raine falling thereon, but
also water cast upon it, or descending from higher
ground by sluices, conduits, &c. For I account moysture
in Summer very needfull in the soil of trees, & drought
in Winter. Provided, that the ground neither be boggy,
nor the inundation be past 24. houres at any time, and
but twice in the whole Summer, and so oft in the Win-
ter. Therefore if your plot be in a Banke, or have a de-
scent, make Trenches by degrees, Allyes, Walkes, and
such like, so as the Water may be stayed from passage.
And if too much water be any hindrance to your walks
(for dry walks doe well become an Orchard, and an
Orchard them :) raise your walks with earth first, and
then

Moyst.

then with stones, as bigge as Walnuts : and lastly, with gravell. In Summer you need not doubt too much water from heaven, either to hurt the health of your body, or of your trees. And if overflowing molest you after one day, avoid it then by deepe trenching.

Some for this purpose dig the soile of their Orchard to receive moisture, which I cannot approve : for the roots with digging are oftentimes hurt, and especially being digged by some unskilfull servant : For the Gardiner cannot doe all himselfe. And moreover, the roots of Apples & Peares, being laid neer day, with the heate of the Sun, will put forth suckers, which are a great hinderance, & sometimes with evill guiding, the destruction of trees, unlesse the delving be very shallow, and the ground laid very levell againe. Cherries and Plummes without delving, will hardly or never (after twenty yeares) be kept from such suckers, nor aspes.

Grafse also is thought needfull for moysture, so you Grafse. let it not touch the roots of your trees : for it will breed mosse and the boall of your tree neere the earth would have the comfort of the Sun and Ayre.

Some take their ground to be too moist when it is not so, by reason of water standing thereon, for except in soure marshes, springs, and continuall overflowings, no earth can be too moist. Sandy & fat earth will avoid all water falling by receit. Indeed a stiffe clay will not receive the water, and therefore if it be grafse or plaine, especially hollow, the water will abide, and it will seem waterish, when the fault is in the want of manuring, and other good dressing.

This plainnesse which we require, had need be naturall, because to force an uneven ground will destroy the fatnesse. For every soile hath his crust next day wherin

Naturally
- plaine.

Crust of the
earth:

trees and herbes put their roots, and whence they draw their sap, which is the best of the soile, and made fertile with heat and cold, moisture and drought, and under which by reason of the want of the said temperature, by the said foure qualities, no tree nor herbe (in a manner) will or can put root. As may be scene, if in digging your ground, you take the weeds of most growth: as grasse or docks (which will grow though they lye upon the earth bare) yet bury them under the crust, and they wil surely dye & perish, & become manure to your ground. This crust is not past 15. or 18 inches deepe in good ground, or other grounds lesse. Hereby appeares the fault of forced plaines, viz. your crust in the lower parts, is covered with the crust of the higher parts, and both with worse earth: your highs having the crust taken away, are become meerly barren: so that either you must force a new crust, or have an evill soile. And be sure you leuell, before you plant, lest you be forced to remove, or hurt your plants by digging, and casting among their roots. Your ground must be cleered as much as you may of stones, and gravel, walls, hedges, bushes, & other weeds.

CHAP. III.

Of the Site.



Low and neere
a River.

Here is no difference, that I find betwixt the necessity of a good soile, and a good site of an Orchard. For a good soil (as is before described) cannot want a good site, & if it do, the fruit cannot be good; and a good site will much mend an evill soile. The best site is in low grounds, (and if you can) neere unto a River. High grounds are not naturally fat. And

And if they have any fatnesse by mans hand, the very descent in time doth wash it away. It is with grounds in this case as it is with men in a common wealth. Much will have more: and once poore, seldome or never rich. The raine will scind, and wash, and the wind will blow fatnesse from the heights to the hollowes, where it will abide, and fatten the earth, though it were barren before.

Hence it is, that we have seldome any plaine grounds, and low, barren: and as seldome any heights naturally fertill. It is unspeakeable, what fatnesse is brought to low grounds by inundations of waters. Neither did I ever know any barren ground in a low plaine by a River side. The goodnesse of the soile in *Howle* or *Hollowdernes*, in *Torkeshire*, is well knowne to ail that know the River *Humber*, and the huge bulkes of their Cattell there. By estimation of them that have seene the low grounds in *Holland*, and *Zealand*, they farre surpasse the most countries in *Europe* for fruitfullnesse, and only because they lie so low. The world cannot compare with *Egypt*, for fertility, so farre as *Nilus* doth over-flow his bankes. So that a fitter place cannot be chosen for an Orchard, then a low plaine by a river side. For besides the fatnesse which the water brings, if any cloudy mist or raine be stirring, it commonly falls downe to, and followes the course of the River. And where see we greater trees of bulke and bough, then standing on or neere the water side? If you aske why the plaines in *Holderes*, and such countries are destitute of woods? I answer that men & cattell (that have put trees thence, from out of Plains to void corners) are better then trees. Neither are those places without trees. Our old fathers can tel us how woods are decayed, & people in the roomth of trees

Psal. 1. 3.
Eze. 17. 8.
Eccl. 39. 17.

Mr. Markham.

Winds.
Chap. 13.

multipli'd. I have stood somewhat long in this poynt, because some do condemne a moist soile for fruit-trees.

A low ground is good to avoide the danger of winds, both for shaking downe your unripe fruite. Trees the most (that I know) being loaden with wood, for want of proyning, and growing high, by the unskilfulnesse of the Arborist, must needs be in continuall danger of the South-west, West, and North west winds, especially in *September* and *March*, when the aire is most temperate from extreame heat, and cold, which are deadly enemies to great winds. Wherefore chuse your ground low. Or if you be forced to plant in a higher ground, let high and strong walls, houses, and trees, as wall-nuts, plane trees, Oakes, and Ashes, placed in good order, be your fence for winds.

Sunne.

The sucken of your dwelling house, descending into your orchard, if it be cleanly conveyed, is good.

The Sunne, in some sort, is the life of the world. It maketh proud growth, and ripens kindly, and speedily, according to the golden tearme: *Annus fructificat, non tellus*. Therefore in the countries, neerer approaching the Zodiacke, the Sunnes habitation, they have better, and sooner ripe fruit, then we that dwell in these frozen parts.

Trees against
a wall.

This provoketh most of our great Arborists, to plant Apricockes, Cherries and Peaches, by a wall, and with tackes, and other meanes to spread them upon, and fasten them to a wall, to have the benefit of the immoderate reflexe of the Sunne, which is commendable for the having of fair, good & soone ripe fruit. But let them know it is more hurtfull to their trees then the benefit they reap thereby: as not suffering a tree to live the tenth part of his age. It helps Gardners to worke, for first the wall

wall hinders the roots; because unto a dry and hard wall of earth or stone a tree wil not, nor cannot put any root to profit, but especially it stops the passage of sap, whereby the barke is wounded & the wood & diseases grow, so that the tree becomes short of life. For as in the body of a man, the leaning or lying on some member, wherby the course of blood is stoppt, makes that member as it were dead for the time, till the bloud returne to his course, and I think, if that stopping should continue any time, the member would perish for want of blood (for the life is in the bloud) & so endanger the body: so the sap is the life of the tree, as the blood is to mans body: neither doth the tree in winter (as is supposed) want his sap, no more then mans body his blood, which in winter, & time of sleep draws inward. So that the dead time of winter, to a tree, is but a night of rest: for the tree at all times, even in winter is nourish'd with sap, & growth as well as mans body. The chilling cold may wel some little time stay, or hinder the proud course of the sap, but so little & so short a time, that in calm & mild season, even in the depth of winter, if you marke it, you may easily perceiue, the sap to put out, and your trees to increase their buds, which were formed in the summer before, & may easily be discerned; for leaves fall not off, til they be thrust off, with the knots or buds, wherupon it comes to passe that trees cannot beare fruit plentifully two years together, and make themselves ready to blossom against the seasonableness of the next Spring.

And if any frost be so extreame, that it stay the sap too much, or too long, then it kills the forward fruit in the bud, and sometimes the tender leaves and twigs, but not the tree. Wherefore, to returne, it is perillous to stop the sap. And where, or when, did you ever see a great tree
packt

packt on a wall? Nay, who did ever know a tree so unkindly splat, come to age? I have heard of some, that out of their imaginary cunning, have planted such trees, on the North side of the wall, to avoyde drought, but the heate of the Sun is as comfortable (which they should have regarded) as the drought is hurtfull. And although water is a soueraigne remedy against drought, yet want of Sun is no way to be helped. Wherefore to conclude this Chapter, let your ground lye so, that it may have the benefit of the South, and West Sun, and so low and close, that it may have moysture, and increase his fatnesse (for trees are the greatest suckers & pillers of earth, and (as much as may be) free from great winds.

CHAP. IIII.

Of the quantity.



Orchard as
good as a corn
field.

IT would be remembered what a benefit riseth, not only to every particular owner of an Orchard, but also to the common welth, by fruit, as shall be shewed in the 16. Chapter (God willing) whereupon must needes follow: the greater the Orchard is (being good and well kept) the better it is, for of good things, being equally good, the biggest is the best. And if it shal appeare, that no ground a man occupieth (no, not the corn field) yeeldeth more gaine to the purse, and house-keeping (not to speake of the unspeakeable pleasure) quantity for quantity, than a good Orchard (besides the cost in planting, and dressing an orchard, is not so much by farre, as the labour and seeding of your corne-fields, nor for durance of time, cōparable, besides the certainty of the one before the

the other) I see not how any labour, or cost in this kind, can be idly or wastfully bestowed, or thought too much. And what other thing is a vineyard, in those countries where vines doe thrive, than a large Orchard of trees bearing fruit? Or what difference is there in the iuice of the Grape, and our Cyder & Perry, but the goodnes of the soile & clime where they grow? which maketh the one more ripe, & so more pleasant then the other. What soever can be said for the benefit rising from an orchard, that makes for the largeness of the Orchards bounds. And (me thinkes) they doe preposterously, that bestow more cost and labours, and more ground in and upon a garden than upon an orchard, whence they reape and may reape both more pleasure & more profit, by infinite degrees. And further, that a Garden never so fresh, and faire, and well kept, cannot continue without both renewing of the earth and the herbs often, in the short and ordinary age of a man: whereas your Orchard well kept shall dure divers hundred yeares, as shall be shewed chap. 14. In a large orchard there is much labour saved, in fencing, and otherwise: for three little orchards, or a few trees, being, in a maner, all out-sides, are so blasted and dangered, and commonly in keeping neglected, and require a great fence; whereas in a great Orchard, trees are a mutual fence one to another, and the keeping is regarded, and lesse fencing serves sixe acres together, than three in severall inclosures.

Compared
with a vineyard.

Compared
with a garden.

Now what quantity of ground is meetest for an Orchard can no man prescribe, but that must be left to every mans severall iudgement, to be measured according to his ability and will, for other necessities besides fruit must be had, and some are more delighted with orchards then others.

What quantity
of ground.

Let

Want is no
hinderance.

How Land-
lords, by their
Tenants may
make flourish-
ing Orchards
in England.

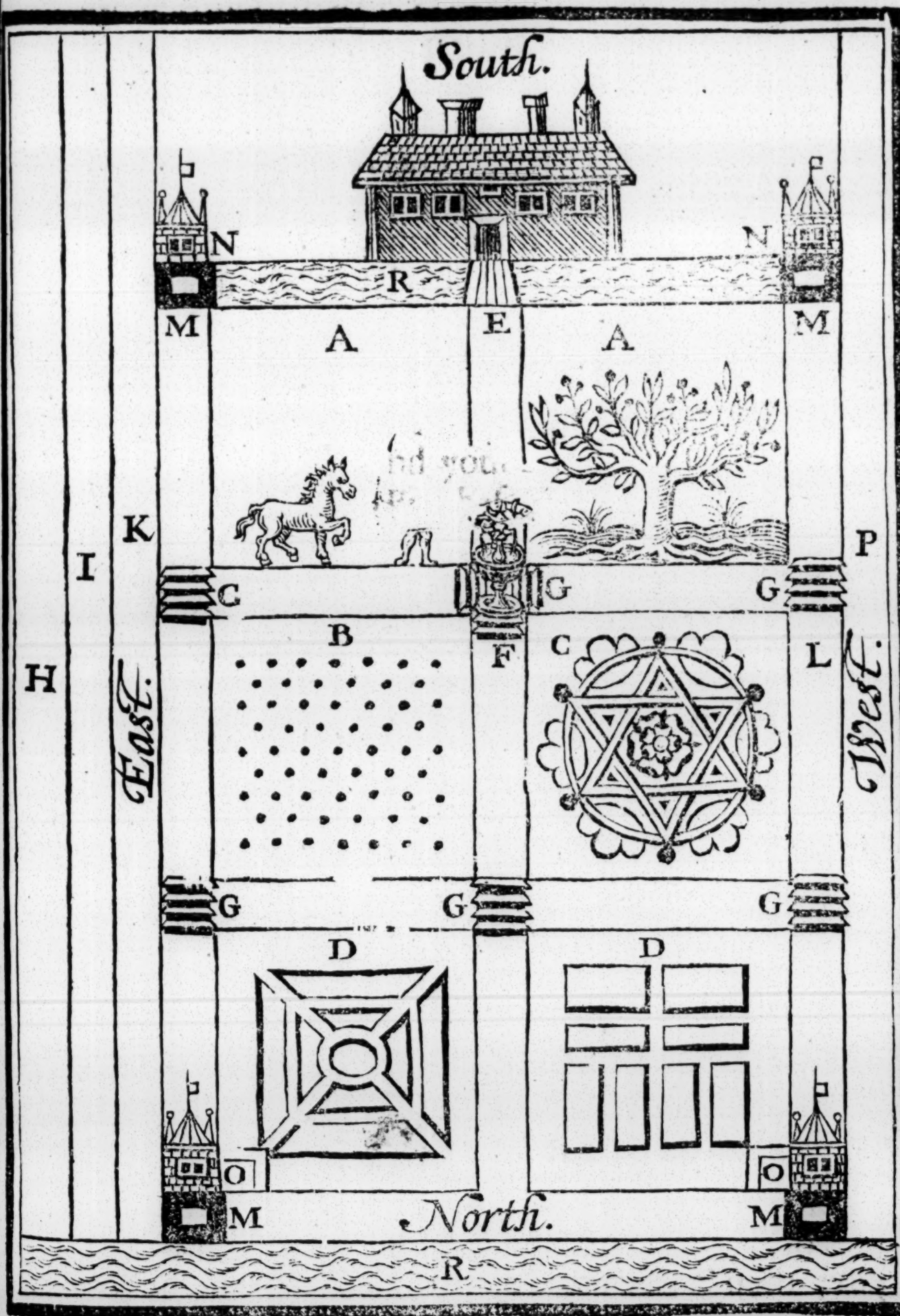
Let no man having a fit plot plead poverty in this case, for an orchard once planted will maintaine it selfe, and yeeld infinit profit besides. And I am perswaded, that if men did know the right and best way of planting, dressing, and keeping trees, and felt the profit and pleasure thereof, both they that have no orchards, would have them & they that have orchards, would have them larger, yea fruit-trees in their hedges, as in *Worcester-shire*, &c. And I think, that the want of planting, is a great loss to our common wealth, and in particular, to the owners of Lord-ships, which land-lords themselves might easily amend, by granting longer terme, & better assurance to their tenants, who have taken up this Proverbe *Botch and sit, Build and sit*: for who will build or Plant for an other mans profit? Or the Parliament might enioyne every occupier of grounds to plant & maintaine: for so many acres of fruitfull ground, so many severall trees or kinds of trees for fruit. Thus much for quantity.

CHAP. V.
Of the forme.

The usuall
forme is a
square.



He goodnesse of the soile, and site, are necessary to the well being of an orchard simply, but the forme is so farre necessary, as the owner shall thinke meete for that kinde of forme wherewith euery particular man is delighted, we leave it to himselfe, *Suum cuique pulchrum*. The forme that men like in general is a square, for although roundnesse be *forma perfectissima*, yet that principle is good where necessity by art doth not force some other forme. If within one large square the Gardiner shall make one round Labyrinth or Maze with some kind of Berries, it will grace your forme, so there bee sufficient



A. All these squares must be set with trees, the Gardens and other ornaments must stand in spaces betwixt the trees, & in the borders and fences
 B. Trees 20. yards a sinder.

C. Garden Knots.
 D. Kitchen garden.

E. Bridge.

F. Conduit.

G. Staires.

H. Walkes set with great wood thicke.

I. Walkes set with great wood round about your Orchard.

K. The out fence.

L. The out fence set with stone-fruit.

M. Mount To force earth for a mount, or such like: set it round with quicke, and lay boughes of trees strangely inter-mingle drops inward, with the earth in the middle
 N. Still-houle.

O. Good standing for Bees, if you have an house.

P. If the river run by your doore, & under your mount, it will be pleasant,

perhaps

sufficient roomth left for walkes, so will foure or more round knots do. For it is to be noted, that the eye must be pleased with the forme. I haue seen squares rising by degrees with staies from your house-ward, according to this forme which I have, *Crassa quod aiunt Minerva*, with an unsteady hand, rough hewn, for in forming the country gardens, the better sort may use better formes, and more costly worke. What is needfull more to be sayd, I referre that all (concerning the forme,) to the Chapter 17 of the ornaments of an Orchard.

CHAP. VII.

Effects of
evill fencing.



Let the fence
be your owne.

ALL your labour past & to come about an Orchard is lost unlesse you fence well. It shall grieve you much to see your young sets rubd loose at the roots, the bark pild, the boughes and twigs cropt, your fruite stolne, your trees broken, and your many yeares labours and hopes destroyed, for want of fences. A chiefe care must be had in this point. You must therefore plant in such a soil, where you may provide a convenient, strong and seemely fence. For you can possesse no goods, that have so many enemies as an orchard, looke Chapter 13. Fruits are so delightfome; and desired of so many (nay, in a manner of all) and yet few will be at cost and take paines to provide them. Fence well therefore, let your plot be wholly in your owne power, that you make all your fence your selfe: for neighbours fencing is none at all, or very carelesse. Take heed of a doore or window, (yea of a wall) of any other mans into your orchard: yea, though it be nayld up, or the wall be high, for perhaps

perhaps they will prove theeves.

All Fences commonly are made of Earth, Stone, Bricke, Wood, or both earth and wood. Dry wall of earth, and dry Ditches, are the worst fences save pales or railes, and doe waste the soonest, unlesse they be well copt with glooe and mortar; whereon at *Mighill-tide* it will be good to sow Wall-flowers, commonly called Bee-flowers, or winter Gilly-flowers, because they will grow (though among stones) and abide the strongest frost and drought, continually green and flowring even in Winter, and have a pleasant smell, and are timely, (that is, they will flower the first and last of flowers) and are good for Bees. And your earthen wall is good for Bees dry and warme. But these fences are both unseemly, evill to repaire, and onely for need, where stone or wood cannot be had. Whosoever makes such Walles, must not pill the ground in the Orchard, for getting earth, nor make any pits or hollowes, which are both unseemely and unprofitable. Old dry earth mixt with sand is best for these. This kind of wall will soone decay, by reason of the trees which grow neere it, for the roots and boales of great trees, will increase, undermine, and overturne such walles, though they were of stone, as is apparant by Ashes, Rountrees, Burtt-rees, and such like, carried in the chat, or berry, by birds into stone-walles.

Kinds of fences, earthen walles.

Fences of dead-wood, as pales, will not last, neither wil railes either last or make good fence.

Pale and Railes.

Stone walles (where stone may be had) are the best of this sort, both for fencing, lasting, and shrouding of your yong trees. But about this must you bestow much paines and more cost, to have them handsome, high & durable.

Stone walls.

But

Quicke wood
and Moats.

But of al other (in mine owne opinion) Quickwood, and Moats or Ditches of water, where the ground is leuell, is the best fence. In unequal grounds, which will not keepe water, there a double ditch may be cast, made straight and level on the top, two yards broad for a faire walk, five or sixe foot higher then the soile, with a gutter on either side, two yards wide and foure foot deepe set with out, with three or foure chesse of thorns, and within with Cherry, Plum, Damson, Bullys, Filbirds, (for I love these trees better for their fruit, & aswell for their forme, as privit) for you may make them take any forme. And in every corner (and middle if you will) a mount would be raised, whereabout the wood may claspe, powdered with wood-binde: which will make with dressing a rare, pleasant, profitable & sure fence. But you must be sure that your quicke thorns either grow wholly, or that there bee a supply betime, either with planting new, or plashing the old where need is. And assure your selfe, that neither wood, stone, earth, nor water, can make so strong a fence, as this after seven yeares growth.

Moats.

Moats, Fish-ponds, and (especially at one side a River) within and without your fence will afford you fish, fence, and moysture to your trees, and pleasure also, if they be so great and deepe that you may have Swans, & other water birds, good for devouring of vermine, and boat for many good uses.

It shall hardly availe you to make any fence for your Orchard, if you be a niggard of your fruit. For as liberality will save it best from noysome neighbours, liberality I say is the best fence, so Iustice must restraine rioters. Thus when your ground is tempered, squared, and fenced, it is time to provide for planting,

CHAP.

CHAP. 7.

Of Sets.



Here is not one point (in my opinion) about an Orchard more to be regarded, than the choice getting and setting of good plants, either for readinesse of having good fruit, or for continuall lasting. For whosoever shall faile in the choice of good Sets, or in getting, gathering or setting his plants, shall never have a good or lasting Orchard. And I take want of skill in this faculty, to be a chiefe hinderance to the most Orchards, and to many for having of Orchards at all.

Some for readinesse, use slips, which seldome take ^{slips.} root: and if they doe take, they cannot last, both because their root having a maine wound, will in short time decay the body of the tree: and besides that roots being so weakly put, are soone nipt with drought or frost. I could never see (lightly) any slip but of apples only set for trees.

A Bur-knot kindly taken from an Apple-tree, is much ^{Bur-knots.} better and surer. You must cut him close at the roots end, an handfull under the knot. (Some use in Summer, about *Lammes*, to circumcise him, and put earth to the knots with hay roaps, and in Winter cut him off and set him, but this is curiosity, needlesse, and danger with removing, and drought,) and cut away all his twigs save one, the most principall, which in setting you must leave above the earth, burying his trunk in the crust of the earth for his root. It matters not much what part of the bough the twig growes out of. If it grow out of

or neerer the root end, some say such an Apple will have no coare nor kinnell. Or if it please the Planter, he may let his bough be crooked, and leave out his top end, one foote, or somewhat more, wherein will be good grafting, if either you like not, or doubt the fruite of the bough (or commonly your bur-knots are Summer fruit) or if you thinke he will not, cover his wound safely.

Visuall Sets.

Maine roots cut.

Stow Sets removed.

The most usuall kind of sets, is plants with rootes growing of kinnells of Apples, Peares, and Crabs, or stones of Cherries, plummies, &c. Removed out of a Nursery, Wood or other Orchard, into, and set in your Orchard in their due places. I grant this kind to be better than either of the former, by much, as more sure and more durable. Herein you must note, that in sets so removed, you get all the roots you can, and without bruising of any; I utterly dislike the opinion of those great Gardeners, that following their Bookes would have the maine rootes cut away, for tops cannot grow without rootes. And because none can get all the roots, and removal is an hindrance, you may not leave on all tops, when you set them: For there is a proportion betwixt the top and roote of a tree, even in the number, at least, in the growth. If the roots be many, they will bring you many tops if they be not hindered. And if you use to stow or top your tree too much, or too low, and leave no issue or little for sap, (as is to be seene in your hedges) it will hinder the growth of rootes and boale, because such a kind of stowing is a kind of smothering, or choaking the sap. Great wood, as Oake, Elme, Ash, &c. being continually kept downe, with sheeres, knife, axe, &c. neither boale nor roote will thrive, but as an hedge or bush. If you intend to graffe in your Set, you may cut him closer with a greater wound, and neerer the earth, within a foote

foote or two, because the graft or grafts will cover his wound. If you like his fruite, and would have him to be a tree of himselfe, be not so bold: this I can tell you, that though you doe cut his top close, and leave nothing but his bulke, because his roots are few, if hee be (but litle) bigger than your thumbe (as I wish all plants removed to be) hee will safely recover his wound within seven yeeres; by good guidance that is: If the next time of dressing immediatly above his uppermost sprig, you cut him off aslope cleanly, so that the sprig stand on the backe side, (and if you can Northward, that the wound may have the benefit of Sunne) at the upper end of the wound: and let that sprig onely be the boale. And take this for a generall rule; Every young plant, if hee thrive, will recover any wound above the earth, by good dressing, although it be to the one halfe, and to his uery heart. This short cutting at the remove, saves your Plants from wind, and need the lesse, or no staking. I commend not tying, or leaning of trees against holds or staies, for it breedes obstruction of sap and wounds incurable. All removing of trees as great as your arme, or above, is dangerous: though sometime some such will grow, but not continue long: Because they be tainted with deadly wounds, either in the root or top. (And a tree once thorowly tainted, is never good.) And though they get some hold in the earth, with some lesser taw, or tawes, which give some nourishment to the body of the tree: yet the heart being tainted, he will hardly ever thrive; which you may easily discern by the blackenesse of the boughes at the heart, when you dresse your trees. Also, when he is set with more tops than the root can nourish, the tops decaying, blacken the boughes, and the boughes the armes,

Generall rule.

Tying of trees.

Generall rule.

Signes of diseases, Chap. 3.

and so they boale at the very heart. Or this taint in the removall, if it kill not presently, but after some short time, it may be discerned by blacknesse or yellownesse in the barke, and a small hungred leafe. Or if your removed plant put forth leaves the next and second Summer, and little or few sprales, it is a great signe of a taint, and next yeeres death. I have knowne a tree tainted in setting, yet grow, and beare blossomes for divers yeeres: and yet for want of strength could never shape his fruit.

Suckers good
sets.

Next unto this, or rather equall with these plants, are suckers growing out of the roots of great trees, which cherries and plums doe seldome or never want: and being taken kindly with their roots, will make very good sets. And you may helpe them much by enlarging their roots with the tawes of the tree, whence you take them. They are of two sorts: Either growing from the very root of the tree: and here you must be carefull, not to hurt your tree when you gather them, by ripping amongst the roots; and that you take them cleane away: for these are a great and continuall annoyance to the growth of your tree: and they will hardly be cleansed. Secondly, or they doe arise from some taw: and these may be taken without danger, with long and good roots, and will soone become trees of strength.

A running
Plant.

There is another way, which I have not thorowly proved, to get not onely plants for graffing, but sets to remaine for trees, which I call a *Running Plant*: the manner of it is this: Take a root or kirnell, and put it into the middle of your plot, and the second yeere in the Spring, geld his tops, if hee have one principall (as commonly by nature they have) and let him put forth onely foure Cyons toward the foure corners of the Orchard, as neere the earth as you can. If he put not foure,
(which

(which is rare) stay his top till hee have put so many. When you have such foure, cut the stocke aslope, as is aforesaid in this chapter, hard above the uppermost sprig, and keep those foure without Cyons cleane & streight, till you have them a yard and a halfe, at least, or two yards long. Then the next spring, in grafting time, lay downe those foure sprayes, towards the foure corners of your Orchard, with their tops in an heape of pure and good earth, and raised as high as the root of your Cyon (for sap will not descend) and a sod to keepe them downe, leaving nine or twelve inches of the top to looke upward. In that hill he will put rootes, and his top new Cyons, which you must spread as before, and so from hill to hill, till hee spread the compasse of your ground, or as farre as you list. If in bending, the Cyons cracke, the matter is small; cleanse the ground, and hee will recover. Every bended bough will put forth branches, and become trees. If this plant be of a Bur-knot, there is no doubt. I have proved it in one branch my selfe: and I know at *Wilton* in *Cleeve-land* a Peare-tree of a great bulke and age, blowne close to the earth, hath put at every knot roots into the earth, and from roote to top, a great number of mighty armes or trees, filling a great roomth, like many trees, or a little Orchard. Much better may it be done by Art in a lesse tree. And I could not mislike this kinde, save that the time will be long before it come to perfection.

Many use to by sets already grafted, which is not the best way: for, first all removes are dangerous: Againe, there is danger in the carriage: Thirdly, it is a costly course of planting: Fourthly, every Gardener is not trusty to sell you good fruit: Fifthly, you know not which is best, which is worst, and so may take most care about

Sets bought.

your worst trees. Lastly, this way keepe you from practice, and so from experience, in so good, Gentlemanly, Scholerlike, and profitable a faculty.

The best sets.

Vnremoved.
How.

The only best way (in my opinion) to have sure and lasting sets, is never to remove: for every remove is an hindrance, if not a dangerous hurt or deadly taint. This is the way. The plot-forme being laid, and the plot appointed where you will plant every set in your Orchard, digge the roomth where your sets shall stand, a yeard compasse, and make the earth mellow and cleane, and mingle it with a few coale-ashes, to avoyd wormes, and immediately after the first change of the Moone, in the latter end of *February*, the earth being a-fresh turned over, put in every such roomth three or foure kirkels of Apples or Peares, of the best: every kirkell in an hole made with your finger, finger deep, a foot distant one from another; and that day moneth following, as many moe, (lest some of the former misse) in the same compasse; but not in the same holes. Hence (God willing) shall you have roots enough. If they all, or divers of them come up, you may draw (but not digge) up (nor put downe) at your pleasure, the next *November*. How many soever you take away, to give or bestow elsewhere, be sure to leave two of the proudest. And when in your 2. and 3. yeere you graffe, if you graffe then at all, leave the one of those two ungrafted, lest in grafting the other you faile: For I find by triall, that after first or second grafting in the same stocke, being mist (for who hits all) the third misse puts your stocke in deadly danger, for want of issue of sap. Yea, though you hit in grafting, yet may your graffes with winde or otherwise, be broken downe. If your graffes or graffe prosper, you have your desire, in a plant vnremoved, without

without taint, and the fruit at your owne choice, and so you may (some little earth being removed) pull, but not digge up the other Plant or Plants in that roomth. If your graffe or stocke, or both perish, you have another in the same place, of better strength to worke upon. For thriving without snub he will overlay your grafted stocke much. And it is hardly possible to misse in grafting so often, if your Gardiner be worth his name.

It shall not bee amisse (as I Judge it) if your Kernels be of choice fruit, and that you see them come forward proudly in their body, and beare a faire and broad leafe in colour, tending to a greenish yellow (which argues pleasant and great fruit) to try some of them ungrafted: for although it be a long time ere this come to beare fruit, ten or twelve yeares, or moe; and at their first bearing, the fruit will not seeme to be like his owne kinde: yet am I assured, upon tryall, before twenty yeares growth, such trees will increase the bignesse and goodnesse of their fruit, and come perfectly to their owne kind. Trees (like other breeding creatures) as they grow in yeares, bignes and strength, so they mend their fruit. Husbands and Housewives find this true by experience, in the rearing of their yong store. More then this there is no tree like this for soundnes & dureable last, if his keeping and dressing be answerable. I grant, the readiest way to come soone to fruit is grafting: because in a manner, all your graffes are taken of fruit-bearing-trees.

Sets ungrafted
best of all.

Now when you have made choice of your sets to remove, the ground being ready, the best time is, immediately after the fall of the leafe, in, or about the change of the Moone, when the sap is most quiet: for then the sap is in turning: for it makes no stay, but in the extremi-

Time of removing.

Generall rule.

ty of drought or cold. At any time in winter, may you transplant trees so you put no ice nor snow to the root of your plant in the setting: and therefore open, calme, and moist weather is best. To remove, the leafe being ready to fall and not fallen, or buds apparantly put forth in a moist warme season, for need, sometime may doe well: but the safest is to walke in the plaine trodden path.

Some hold opinion, that it is best removing before the fall of the leafe, and I heare it commonly practised in the South by our best arborists, the leafe not fallen: and they give the reason to be, that the descending of the sap will make speedy roots. But marke the reasons following, and I thinke you shall finde no soundnesse, either in that position or practise, at least in the reason.

1 I say, it is dangerous to remove when the sap is not quiet, for every remove gives a maine checke to the stirring sap, by staying the course thereof in the body of your plant, as may appeare in trees removed any time in summer, they commonly die, nay hardly shall you save the life of the most yong and tender plant of any kinde of wood (scarcely hearbs) if you remove them in the pride of sap. For proud sap universally staied by removall, ever hinders, often taints, and so presently, or in very short time kills. Sap is like blood in mans body, in which is the life. *Cap. 3. p. 9.* If the blood universally be cold, life is excluded; so is sap tainted by untimely removall. A stay by drought, or cold, is not so dangerous (though dangerous if it be extreame) because more naturall.

2 The sap never descends, as men suppose, but is consolidated & transubstantiated into the substance of the tree, and passeth (alwaies above the earth) upward, not only betwixt the barke and the wood, but also into and in both body & barke, though not so plentifully, as may
appeare

appeare by a tree budding, nay fructifying two or three yeares, after he be circumcised, at the very root, like a river that enlargeth his channell by a continuall descent.

3 I cannot perceiue what time they would have the sap to descend. At *Midsummer* in a biting drought it staies, but descends not, for immediately upon moisture it makes second shoots, at (or before rather) *Michaeltide*, when it shapens his buds for next yeeres fruit. If at the fall of leafe, I grant, about that time is the greatest stand, but no descent of sap, which begins somewhat before the leafe fal, but not long, therefore at that time must be the best removing, not by reason of descent, but stay of sap.

4 The sap in this course hath his profitable and apparant effects, as the growth of the tree, covering of wounds, putting of buds, &c. Wherupon it follows, if the sap descend, it must need have some effect to shew it.

5 Lastly, boughs plasht, and laid lower than the root, die for want of sap descending, except where it is forced by the maine streame of the sap, as in top boughs hanging like water in pipes, or except the plasht boughs lying on the ground put roots of his owne, yea under boughs which we commonly call water boughs, can scarcely get sap to live, yea in time die, because the sap doth presse so violently upward, and therefore the fairest shootes and fruits are alwaies in the top.

Obiect. If you say that many so removed thrive, I say that somewhat before the fall of the leafe (but not much) ^{Remove} is the stand, for the fall and the stand are not at one in- ^{soone.}stant, before the stand is dangerous. But to returne.

The sooner in winter you remove your sets, the better, the later the worse: For it is very perilous if a strong drought take your sets before they have made good their rooting. A Plant set at the fall shall gaine (in a man-

manner) a whole yeares growth of that which is set in the Spring after.

The manner
of setting.

I use in the setting to be sure, that the earth be mouldy, (and somewhat moist) that it may runne among the small tangles without straining or bruising: and as I fill in earth to his roote, I shake the Set easily to and fro to make the earth settle the better to his roots: and withall easily with my foote I put in the earth close, for ayre is noysome, and will follow concavities, Some prescribe Oates to bee put in with the earth. I could like it, if I could know any reason thereof: and they use to set their plants with the same side toward the Sunne, but this conceit is like the other. For first, I would have every tree to stand so free from shade, that not onely the roote (which therefore you must keepe bare from grasse) but body, boughes, and branches, and every spray, may have the benefit of Sunne. And what hurt, if that part of the tree, that before was shadowed, be now made partaker of the heat of the Sunne. In turning of Bees, I know it is hurtfull, because it changeth their entrance, passage, and whole worke: But not so in Trees.

Set in the
crust.

Set as deepe as you can, so that in any wise you goe not beneath the crust. *Looke Chap. 2.*

Moysture
good.

We speake in the second Chapter of moysture in generall: but now especially having put your removed plant into the earth, powre on water (of a puddle were good) by distilling presenly, and so every weeke twice in strong drought, so long as the earth will drinke, and refuse by overflowing. For moisture mollifies, and both gives leave to the roots to spread, and makes the earth yeeld sap and nourishment, with plenty & facility. Nurses (they say) give most & best milke after warme drinks.

If

If your ground be such that it will keepe no moilture at the root of your plant, such plant shall never like, or but for a time. There is nothing more hurtfull for young trees than piercing drought. I have knowne trees of good stature after they have beene of divers yeeres growth, and thrive well for a good time, perish for want of water, and very many by reason of taints in setting.

It is meet your sets and grafts be fenced, till they be as big as your arme, for feare of annoyances. Many waies may sets receive dammages, after they be set, whether grafted or ungrafted. For although we suppose, that no noysome beast or other thing must have accesse among your trees; yet by casualty, a Dog, Cat, or such like, or your selfe, or negligent friend bearing you company, or a shrewd boy, may tread or fall upon a young and tender plant or graft. To avoid these and many such chances, you must stake them round a pretty distance from the set, neither so neere, nor so thicke, but that it may have the benefitt of Sunne, raine, and aire. Your stakes (small or great) would be so surely put, or driven into the earth, that they breake not, if any thing happen to leane upon them, else may the fall be more hurtfull, than the want of the fence. Let not your stakes shelter any weeds about your sets for want of Sunne is a great hinderance. Let them stand so farre off, that your grafts spreading receive no hurt, either by rubbing on them, or of any other thing passing by. If your stocke be long, and high grafted (which I must discommend (except in need) because there the sap is weake, and they are subject to strong wind, and the lightings of birds) tie easily with a soft list three or foure prickes, under the clay, and let their tops stand above the grafts, to avoid the lighting of Crowes, Pies, &c. upon your grafts. If you sticke
some

Grafts must
be fenced.

some sharpe thornes at the rootes of your stalkes, they will make hurtfull things keepe of the better. Other better fences for your grafts I know none. And thus much for sets and setting.

CHAP. 8.

of the distance of trees.



Hurts of too
neere planting.

Know not to what end you should provide good ground, well fenced, and plant good sets; and when your trees should come to profit, have all your labours lost, for want of due regard, to the distance of placing your trees. I have seen many trees stand so thicke, that one could not thrive for the throng of his neighbours. If you doe marke it, you shall see the tops of trees rub'd off, their sides galled like a galled horse backe, and many trees have more stumps than boughes, and most trees no well thriving, but short, stumpish, and evill thriving boughes: like a Corne field over-seeded, or a towne over-peopled, or a pasture overlaid which the Gardiner must either let grow, or leave the tree very few boughes to beare fruit. Hence small thrift, galls, wounds, diseases, and short life to the trees: and while they live greene, little, hard, worme-eaten, and evill thriving fruit arise, to the discomfort of the owners.

To prevent which discommodity, one of the best remedies, is, the sufficient and fit distance of trees. Therefore at the setting of your plants, you must have such respect, that the distance of them be such, that every tree be not annoyance, but an help to his fellowes: for trees (as all other things of the same kind) should shroud, and
not

not hurt one another. And assure your selfe, that every touch of trees (as well under as above the earth) is hurtfull. Therefore this must be a generall rule in this Art: That no tree in an Orchard well ordered, nor bough, nor Cyon, drop upon, or touch his fellowes. Let no man thinke this impossible, but looke in the eleventh Chapter of dressing of trees. If they touch, the wind will cause a forcible rub. Young twigs are tender, if boughes or armes touch or rub, if they are strong, they make great galls. No kinde of touch therefore in trees can be good.

Generall rule.

All touches hurtfull.

Now it is to be considered what distance amongst sets is requisite, and that must be gathered from the compasse and roomth, that each tree by probability will take and fill. And herein I am of a contrary opinion to all them which practise or teach the planting of trees, that ever yet I knew, read, or heard of. For the common space betweene tree and tree, is ten foot: if twenty foot, it is thought very much. But I suppose twenty yards distance is small enough betwixt tree and tree, or rather too too little. For the distance must needs be as farre as two trees are well able to over-spread, and fill, so they touch not by one yard at least. Now I am assured, and I know one Apple-tree, set of a slip *finger-great*, in the space of 20 yeeres (which I account a very small part of a trees age, as is shewed Chapter 14.) hath spread his boughes eleven or twelve yards compasse, that is, five or six yards on every side. Hence I gather, that in forty or fifty yeeres (which yet is but a small time of his age) a tree in good soile, well liking, by good dressing (for that is much available to this purpose) will spread double at the least, *viz.* twelve yards on a side, which being added to twelve allotted to his fellow, make twenty and foure yards, and so

The best distance of trees.

The part of
a tree.

so farre distant may every tree stand from another. And looke how far a tree spreads his boughes aboue, so farre doth he put his roots under the earth, or rather further, if there be no stop, nor let by walls, trees, rocks, barren earth, or such like: for an huge bulke, and strong armes, massie boughes, many branches, and infinit twigs require wide spreading roots. The top hath the vast aire to spread his boughes in, high and low, this way and that way: but the roots are kept in the crust of the earth, they may not goe downward, nor upward out of the earth, which is their element, no more than the Fish out of the water, Camelion out of the aire, nor Salamander out of the fire. Therefore they must needs spread farre under the earth. And I dare well say, if nature would give leave to man by Art to dresse the roots of trees, to take away the tawes and tangles, that lap and fret, and grow superfluously and disorderly, (for every thing *sublunary* is cursed for mans sake) the tops above being answerably dressed, we should have trees of wonderfull greatnesse, and infinite durance. And I perswade my selfe that this might be done sometimes in Winter, to trees standing in faire plaines and kindly earth, with small or no danger at all. So that I conclud, that 24. yards are the least space that Art can allot for trees to stand distant one from another.

Waste ground
in an orchard.

If you aske mee what use shall be made of that waste ground betwixt tree and tree? I answer: If you please to plant some tree or trees in that middle space, you may, and as your trees grow contiguous, great and thick, you may at your pleasure take up those last trees. And this I take to be the chiete cause, why the most trees stand so thicke. For men not knowing (or not regarding) this secret of needfull distance, and loving fruit of trees planted to their hands, thinke much to pull up any, though

though they pine one another. If you or your heires or successours would take up some great trees (past setting) where they stand too thicke, be sure you doe it about *Mid-summer*, and leave no maine roots. I destinate this place of foure and twenty yards, for trees of age and stature. More than this, you have borders to be made for walkes, with Roses, Berries, &c.

And chiefly consider: that your Orchard, for the first twenty or thirty yeeres, will serue you for many Gardens, for Safron, Licoras, roots, and other herbs for profit, and flowers for pleasure: so that no ground need be wasted, if the Gardener be skilfull and diligent. But be sure you come not neere with such deepe delving, the roots of your trees, whose compasse you may partly discerne, by the compasse of the tops, if your top be well spread. And under the droppings and shadow of your trees, be sure no herbs will like. Let this be said for the distance of Trees.

C H A P. 9.

Of the placing of Trees.

He placing of trees in an Orchard is well worth the regard: For although it must be granted, that any of our foresaid trees (Chapter 2.) will like well in any part of your Orchard, being good and well drest with earth: yet are not all Trees alike worthy of a good place. And therefore I wish that your Filbird, Plummes, Damfins, Bullace, and such like, be utterly removed from the plaine soile of your Orchard, into your fence: for there is no such fertilitie and easfull growth,

as within : and there also they are more subject, and can abide the blasts of *Æolus*. The cherries and plummes being ripe in the hot time of Summer, and the rest standing longer, are not so soone shaken as your better fruit : neither if they suffer losse, is your losse so great. Besides that, your fences and ditches will devoure some of your fruit growing in or neere your hedges. And seeing the continuance of all these (except Nuts) is small, the care of them ought to be the lesse. And make no doubt, but the fences of a large Orchard, will containe a sufficient number of such kind of Fruit-trees in the whole compasse. It is not materiall, but at your pleasure, in the said fences, you may either intermingle your severall kindes of fruit-trees, or set every kinde by himselfe, when order doth very well become your better and greater fruit. Let therefore your Apples, Peares, and Quinches, possesse the soile of your Orchard, unlesse you be especially affected to some of your other kindes : and of them let your greatest trees of growth stand furthest from Sun, and your Quinches at the South side or end, and your Apples in the middle, so shall none be any hinderance to his fellowes. The VVarden-tree, and Winter-Peare will challenge the preheminence for stature. Of your Apple-trees, you shall finde difference in growth. A good Pipping will grow large, and a Costard-tree : stead them on the North side of your other Apples, thus being placed, the least will give Sunne to the rest, and the greatest will shroud their fellowes. The fences and out-trees will guard all.

CHAP. X
Of Grafting.

NOW are we come to the most curious point ^{Of Graving or Carving.} of our faculty: curious in conceit, but indeed as plaine and easie as the rest, when it is plainely shewne, which we commonly call *Graffing*, or (after some) *Grafting*. ^{Grafting what?} I cannot *Etymologize*, nor shew the originall of the Word, except it come of *Graving* and *Carving*.



But the thing or matter is: The reforming of the fruit of one tree with the fruit of another, by an artificiall transplacing or transposing of a twigge, bud or leafe, commonly called a *Graft* taken from one tree of the same, or some other kinde, and placed or put to, or into another tree in one time and manner.

D

Of

Kinds of
grafting.

Of this there be divers kinds, but three or foure now especially in use : to wit, Grafting, incising, packing on, grafting in the scutchion, or inoculating : whereof the chiefe and most usuall, is called grafting (by the generall name, *Cataexochen* :) for it is the most knowne, surest, readiest, and plainest way to have store of good fruit.

Graft how.

It is thus wrought ; You must with a fine, thin, strong and sharpe Saw, made and armed for that purpose, cut off a foot above the ground, or thereabouts, in a plaine without a knot, or as neare as you can without a knot (for some stocks will bee knotty) your Stocke, set, or plant, being surely stayed with your foot and legge, or otherwise straight overthwart (for the Stocke may bee crooked) and then plaine his wound smoothly with a sharpe knife : that done, cleave him cleanly in the middle with a cleaver, and a knocke or mall, and with a wedge of wood, Iron or Bone, two handfull long at least, put into the middle of that clift, with the same knocke, make the wound gape a straw bredth wide, into which you must put your Graffes.

A Graft what.

The graft is a top twig taken from some other Tree (for it is a folly to put a graffe into his owne Stocke) beneath the uppermost (and sometime in need the second) knot, and with a sharpe knife fitted in the knot (& some time out of the knot when need is) with shoulders an inch downward, and so put into the stocke with some thrusting (but not straining) barke to barke inward.

Eyes.

Let your graffe haue three or foure eyes for readinesse to put forth, and giue issue to the sap. It is not a misse to cut off the top of your graffe, and leaue it but five or sixe inches long, because commonly you shall
see

see the tops of long graffes die. The reason is this. The sap in graffing receives a rebuke, and cannot worke so strongly presently, and your graffes receive not sap so readily, as the naturall branches. When your graffes are cleanly and closely put in, and your wedge puld out nimbly, for feare of putting your graffes out of frame, take well tempered morrer, soundly wrought with chaffe or horse dung (for the dung of cattell will grow hard, and straine your graffes) the quantity of a Gooses egge, and divide it iust, and therewithall, cover your stocke, laying the one halfe on the one side, and the other halfe on the other side of your graffes (for thrusting against your graffes) you move them, and let both your hands thrust at once, and alike, and let your clay be tender, to yeeld easily; and all, lest you move your graffes. Some use to cover the cleft of the Stocke, under the clay with a piece of barke or leafe, some with a sear-cloth of waxe and butter, which as they be not much needful, so they hurt not, unlesse that by being busie about them, you move your graffes from their places. They use also mosse tyed on above the clay with some bryar, wicker, or other bands. These profit nothing. They all put the graffes in danger, with pulling and thrusting: for I hold this generall rule in Generall rule. graffing and planting: if your stocke and graffes take, and thrive (for some will take and not thrive, being tainted by some meanes in the planting or graffing) they will (without doubt) recover their wounds safely and shortly.

The best time of graffing from the time of removing your stocke is the next Spring, for that saves a second wound, and a second repulse of sap, if your stocke be of sufficient bignesse to take a graffe from as bigge as your Time of
grafting. thumbe,

thumbe, to as big as an arme of a man. You may graffe lesse (which I like) and bigger, which I like not so well. The best time of the yeare is in the last part of *February*, or in *March*, or beginning of *Aprill*, when the Sunne with his heat begins to make the sap stirre more rankly, about the change of the moon before you see any great apparancy of leafe or flowers but onely knots and buds, and before they be proud, though it be soner, Cherries Peares, Apricoks, Quinces, and plummes would be gathered and grafted sooner.

Gathering of
graftes.

The graftes may be gathered sooner in *February*, or any time within a month, or two before yoz graffe, or vpon the same day (which I commend) If you get them any time before, for I have knowne graftes gathered in *December* and doe well, take heed of drought. I have my selfe taken a burknot of a tree, & the same day when he was laid in the earth about mid *February*, gathered grafts and put in him, and one of those graftes bore the third yeare after, and the fourth plentifully. Graftes of old trees would be gathered sooner then of young trees for they sooner breake and bud. If you keepe graftes in the earth, moisture with the heat of the Sun will make them sprout as fast, as if they were growing on the tree. And therefore seeing keeping is dangerous, the surest way (as I iudge) is to take them within a weeke of the time of your grafting.

Graftes of old
trees.

The grafts would be taken not of the proudest twigs, for it may be your stocke is not answerable in strength. And therefore (say I) the grafts brought from South to us in the north although they take and thrive (which is somewhat doubtfull, by reason of the difference of the clime and carriage) yet shall they in time fashion themselves to our cold Notherne soile, in groth, taste &c.

Where taken.

Nor

Nor of the poorest, for want of strength may make them unready to receive sap (and who can tell but a poore graft is tainted) nor on the outside of your tree, for there should your tree spread but in the midst: for there you may bee sure your Tree is no whit hindered in his growth or forme. He will still recover inward, more then you would wish. If your clay clift in Summer with drought, look well in the Chinkes for Emmets and Earewigs, for they are cunning and close theeves, about grafts you shall finde them stirring in the morning and evening, and the rather in the moist weather. I have had many young buds of Graffes, even in the flourishing, eaten with Ants. Let this suffice for graffing, which is in the faculty counted the chiefe secret, and because it is most usuall it is best knowne.

Graffes are not to bee disliked for growth, till they wither, pine, and die. Usually before *Midsummer* they breake, if they live. Some (but few) keeping proud and greene, will not put till the second yeere, so is it to bee thought of sets.

The first shew of putting is no sure signe of growth, it is but the sap the graffe brought with him from his tree.

So soone as you see the graft put for growth, take away the clay, for then doth neither the stocke nor the graffe need it (put a little fresh well-tempered clay in the hole of the stocke) for the clay is now tender, and rather keepes moisture then drought.

The other waies of changing the naturall fruit of Trees, are more curious then profitable, and therefore I mind not to bestow much labour or time about them, onely I shall make knowne what I have proved, and what I doe thinke.

And first of incising, which is the cutting of the backe ^{Incising.}
of

A great stocke.

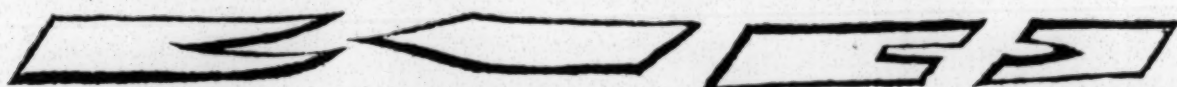
of the boale, a rine or branch of a tree at some bending or knee, shoulderwise with two gashes, onely with a sharpe knife to the wood: then take a wedge, the bignesse of your graffe sharpe ended, flat on the one side, agreeing with the tree, and round on the other side, and with that being thrust in, raise your barke, then put in your graffe fashioned like your wedge iust: and lastly cover your wound, and fast it up, and take heed of straining. This will grow but to small purpose, for it is weake hold, and lightly it will be under growth. Thus you may graft betwixt the barke and the tree of a great stocke that will not easily be clifted: But I have tryed a better way for great trees. viz, First, cut him off straight, and cleanse him with your knife, then cleave him into foure quarters, equally with a strong cleaver: then take for every Clift two or three small (but hard) wedges iust of the bignesse of your grafts, and with those Wedges driven in with an hammer open the foure clifts so wide (but no wider) that they may take your 4. graffes, with thrusting, not with straining: and lastly cover and clay it closely, and this is a sure and good way of grafting: or thus, clift your stock by his edges twice or thrice with your cleaver, and open him with your wedge in every clift one by one, and put in your grafts, and then cover them. This may doe well.

Packing thus.

Packing on is, when you cut a slope a twig of the same bignesse with your graft, either in or besides the knot, two inches long, and make your graft agree iumpe with the Cyon, and gash your graft and your Cyon in the middest of the wound, length-way, a straw breadth deepe, and thrust the one into the other, wound to wound, sap to sap, barke to barke, then tie them close and clay them. This may doe well. The fairest graft I have

have in my little Orchard, which I have planted, is thus packt on, and the branch whereon I put him, is in his plentiful root.

To bee short in this poynt, cut your graft in any sort or fashion, two inches long, and ioyned him cleanly and close to any other sprig of any tree in the latter end of the time of grafting, when sap is somewhat rife, and in all probability they will close and thrive: thus



The sprig. The graft. The twig. The graft.

Or any other fashion you thinke good.

Inoculating is an eye or bud, taken barke and all from Inoculating. one tree, and placed in the roome of another eye or bud of another, cut both of one compasse, and there bound. This must be done in Summer, when the sap is proud.

Much like unto this is that, they call grafting in the scutcheon, they differ thus. That here you must take an eie with his leafe, or (in mine opinion) a bud with his leaves. (Note that an eye is for a Cyon, a bud is for flowers and fruit,) and place them on another tree, in a plaine Grafting in the Scutcheon. (for so they teach) the place or barke where you must set it, must be thus cut with a sharpe knife, and the barke raised with a wedge, and then the eie or budde put in and so bound up. I cannot deny but such may grow. And your bud if hee take will flowre and beare fruit that yeere: as some grafts & sets also, being set for bloomes. If these two kinde thrive, they reforme but a spray, and an undergrowth. Thus you may place Roses on Thornes, and Cherries on Apples, and such like. Many write much more of grafting, but to small purpose. Whom we leave to themselves, and their followers; and ending this secret wee come in the

next Chapter to a point of knowledge most requisite in an Arborist, as well for all other woods as for an orchard.

CHAP. XI.

Of the right dressing of Trees.

Necessity of
dressing trees.



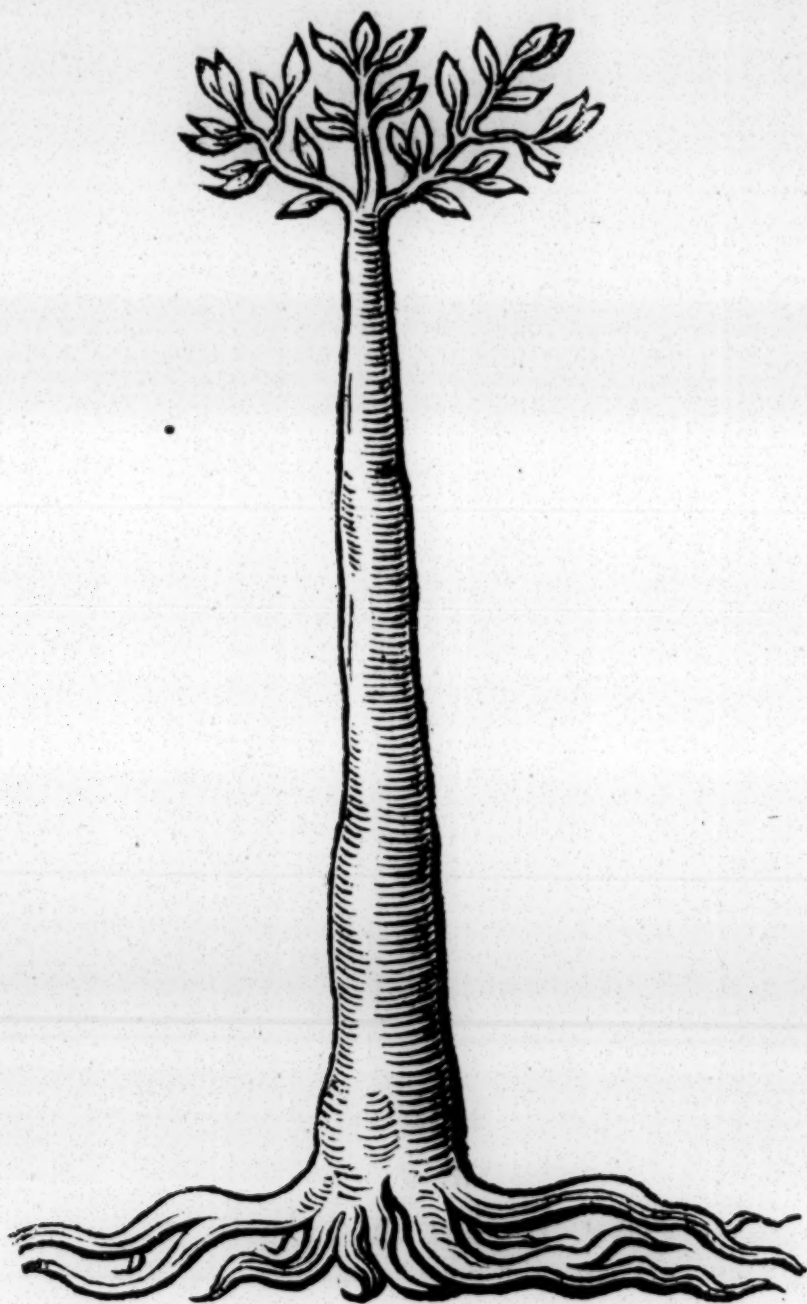
IF all these things aforesaid were indeed performed, as we have shewed them in words, you should have a perfect orchard in nature and substance, begun to your hand : And yet are all these things nothing, if you want that skill to keep and dresse your trees. Such is the condition of all earthly things, wherby a man receiveth profit or pleasure, that they degenerate presently without good ordering. Man himselfe left to himselfe growes from his heavenly and spirituall generation and becommeth beastly, yea devillish to his owne kind, unlesse he be regenerate. No marvell then, if Trees make their shootes, and put their spraiies disorderly. And truly (if I were worthy to iudge) there is not a mischief that breedeth greater and more generall harme to all the Orchard (especially if they be of any continuance) that ever I saw, (I will not except three) then the want of the skillfull dressing of trees. It is a common and unskillfull opinion, and saying, Let all grow, and they will beare more fruit: and if you lop away superfluous boughes, they say, what a pitty is this? How many apples would these have borne? not considering their may arise hurt to your Orchard, as well (nay rather) by abundance, as by want of wood, sound and thriving plant in a good soyle, will ever yeeld too much wood, and disorderly, but never too little. So that a skillfull and painfull Arborist, need never

Generall rule.

never want matter to effect a plentiful and well drest Orchard : for it is an easie matter to take away superfluous boughes (if your Gardener have skill to know them) whereof your plants will yeeld abundance, and skill will leave sufficiently well ordered. All ages both by rule and experience do consent to pruning and lopping of trees: yet have not any that I know described unto us (except in darke and generall words) what or which are those superfluous boughes which we must take away; and that is the chiefe and most needfull point to be known in lopping. And we may well assure our selves (as in all other Arts, so in this) there is a vantage and dexterity by skill, and an habit by practise out of experience, in the performance hereof for the profit of mankind; yet doe I not know (let me speake it with the patience of our cunning Arborists) any thing within the compasse of humane affaires so necessary, and so little regarded, not onely in Orchards, but also in all other timber trees, where or whatsoever.

How many Forrests and woods? wherein you shall have for one lively thriving tree, foure (nay sometimes 24.) evill thriving, rotten and dying trees, even while they live. And instead of trees thousand of bushes and shrubs. What rottenness? what hollowness? what dead armes? withered tops? curtailed trunkes? what loads of mosses? drooping boughes? and dying branches shall you see every where? And those that like in this sort are in a manner all unprofitable boughes, cankered armes, crooked, little and short boales: what an infinite number of bushes, shrubs, and skrogs of hazels, thornes, and other profitable wood, which might bee brought by dressing to become great and goodly Trees. Consider now the cause: The lesser wood hath bene spoyled with

Timber wood
evill drest.



The cause of
hurts in
woods.

Imagine the root to be spread farre wider.

with carelesse, unskilfull, and untimely stowing, and much also of the great wood. The greater trees at the first rising have filled and over-loaden themselves with a number of wastefull boughes and suckers, which have not onely drawne the sap from the boale, but also have made it knotty, and themselves and the boale mossie for want of dressing, whereas if in the prime of growth they

they had beene taken away close, all but one top (according to this patterne) and cleane by the bulke, the strength of all the sap should have gone to the bulk, and so he would have recovered and covered his knots, and have put forth a faire, long and streight body (as you see) for timber profitable, huge great of bulke, and of infinite last.

Dresse timber
trees how.

If all timber trees were such (will some say) how should we have crooked wood for wheelles, coorbs, &c.

Ans. Dresse all you can, and there will be enough crooked for those uses.

More than this, in most places, they grow so thicke, that neither themselves, nor earth, nor any thing under or neere them can thrive, nor Sunne, nor raine, nor aire can doe them, nor any thing neere or under them any profit or comfort.

I see a number of Hags, where out of one roote you shall see three or foure (nay more) such as mens unskillfull greedinesse, who desiring many have none good) pretty Okes or Ashes, straight and tall, because the root at the first shoote gives sap amaine: but if one onely of them might be suffered to grow, and that well and cleanly pruned, all to his very top, what a tree should we have in time ? And wee see by those rootes continually and plentifully springing, notwithstanding so deadly wounded. What a commodity should arise to the owner, and the Common-wealth, if wood were cherished, and orderly dressed.

The wast boughes closely and skilfully taken away, would give us store of fences and fewell, and the bulke of the tree in time would grow of huge length and bignesse. But here (me thinks) heare an unskillfull Arborist say, that trees have their severall formes, even by nature,

Profit of trees
dressed.

The end of
Trees.

ture, the Peare, the Holly, the Aspe, &c. grow long in bulke with few and little armes, the Oke by nature broad and such like. All this I grant: but grant me also, that there is a profitable end, and use of every tree, from which if it decline (though by nature) yet man by Art may (nay must) correct it. Now other end of trees I never could learne, than good timber, fruit much and good and pleasure. Uses Physicall hinder nothing a good forme.

Trees will take
any forme.

Neither let any man ever so much as thinke, that it is unprofitable, much lesse impossible, to reforme any tree of what kind soeuer. For (beleeve me) I have tried it, I can bring any tree (beginning by time) to any forme. The peare and holly may bee made to spread, and the Oke to close it.

The end of
Trees.

But why doe I wander out of the compasse of mine Orchard, into the Forrests and Woods? Neither yet am I from my purpose, if boales of timber trees stand in need of all the sap, to make them great and straight (for strong growth and dressing makes strong trees) then it must needs be profitable for fruit (a thing more immediately serving a mans need) to have all the sap his root can yeeld: for as timber sound, great and long, is *the good of timber trees*, and therefore they beare no fruit of worth so fruit, good, sound, pleasant, great and much, is the end of fruit-trees. That gardner therefore shall performe his duty skilfully and faithfully, which shall so dresse his trees, that they may beare such and such store of fruit, which he shall never do (dare undertake) unlesse he keep this order in dressing his trees.

How to dresse
a fruit-tree.

A fruit-tree so standing, that there need none other end of dressing but fruit (not ornaments for walkes, nor delight to such as would please their eye onely, and yet the

the best forme cannot but both adorne & delight) must be parted from within two foote, or thereabouts, of the earth, so high to give liberty to dresse his roote, and no higher, for drinking vp the sape that should feede his fruit, for the boale will be first, and best served and fed, because he is next the roote, and of greatest waxe and substance, and that makes him longest of life, into two, three, or foure armes, as your stocke or graffes yeeld twigs, and every arme into two or more branches, and euery branch into his severall Cyons. still spreding by equall degrees, so that his lowest spray be hardly without the reach of a mans hand, and his highest be not past two yards higher, rarely (especially in the middest) that no one twig touch his fellow. Let him spread as farre as he list without his maister-bough, or lope equally. And when any bough doth grow sadder and fall lower, than his fellowes (as they will with weight of fruite) ease him the next spring of his superfluous twigs, and he will Rise: when any bough or spray shal amount aboue the rest; either snub his top with a nip betwixt your finger and your thumbe, or with a sharpe knife, and take him cleane away, and so you may use any Cyon you would reforme, and as your tree shall grow in stature and strength, so let him rise with his tops but slowly, and earely, especially in the middest, and equally, and in bredth also, & follow him vpward with lopping his under growth and water boughes, keping the same distance of two yards, but not aboue three in any wise, betwixt the lowest and the highest twigs.

1. Thus you shal haue well liking, cleane skind, health- Benefits of
good dressing.
full great, and long lasting trees.

2. Thus shal your tree grow low, and safe from winds,
for his top will be great, broad and weighty.

3 Thus

3. Thus growing broad, shall your trees beare much fruit (I dare say) one as much as fixe of your common trees, and good without shadowing, dropping and fretting; for his boughes, branches, and twigs shalbe many, and those are they (not the boale) which beare the fruit.

4. Thus shall your boale being little (not small but low) by reason of his shortnesse, take little, and yeeld much say to the fruit.

5. Thus your trees by reason of strength in time of setting shall put forth more blossomes and more fruite being free from raints; for strength is a great helpe to bring forth much and safely, whereas weakenesse failes in setting, though the season be calme.

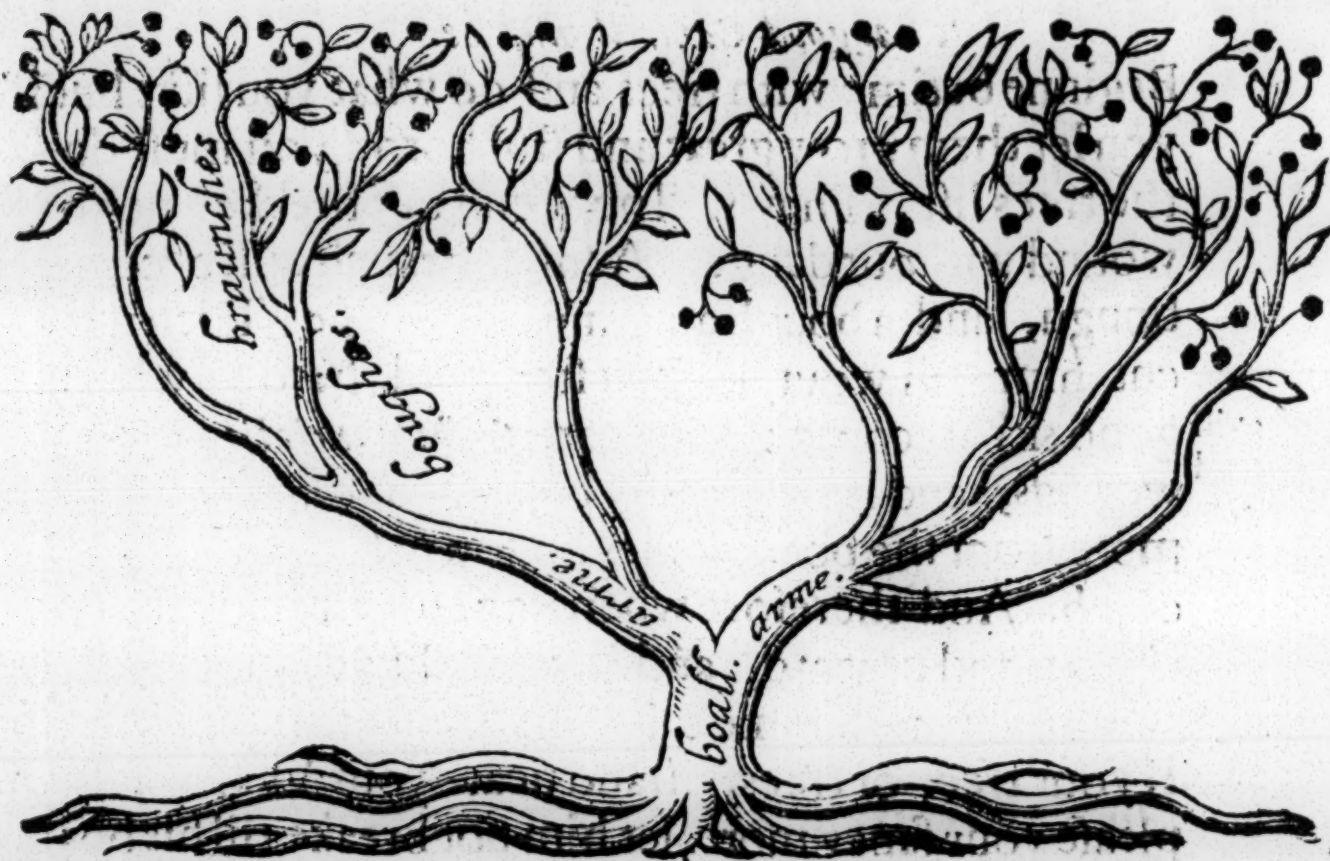
Some use to bare trees rootes in winter, to stay the setting till hotter seasons, which I discommend, because,

1. They hurt the rootes.
2. It stayes it nothing at al.
3. Though it did, being small, with us in the North, they have their part of our *Aprill* and *Mayes* frosts.
4. Hinderance cannot profit weake trees in setting.
5. They wast much labour.
6. Thus shall your tree be easie to dresse, and without danger, either to the tree or the dresser.
7. Thus may you safely and easily gather your fruite without falling, bruising or breaking of Cyons.

This is the best forme of a fruit tree, which I haue here onely shadowed out for the better capacity of them that are led more with the eye, then the mind, craving pardon for the deformitie, because I am nothing skilfull either in painting or carving.

Imagine that the paper makes but one side of the tree to appeare, the whole round compass will giue leaue for many more armes, boughes, branches, and Cyons.

The

The perfect forme of a Fruit-tree.

If any thinke a tree cannot well be brought to this forme : *Experto crede Roberto*, I can shew divers of them under twenty yeeres of age.

The fittest time of the Moone for proyning is as of Time best for grafting, when the sap is ready to stirre (not proudly proyning, stirring) and so to cover the wound, and of the yeere, a moneth before (or at least when) you graffe. Dresse Peares, Apricocks, Peaches, Cherries, and Bullyes sooner. And old trees before young plants, you may dresse at any time betwixt Lease and Lease. And note, where you take any thing away, the sap the next summer will be putting: be sure therefore when he puts a bud in any place where you would not have him, rub it off with your finger.

And

Dressing be-
time.

And here you must remember the common homely
Proverbe:

*Soone crookes the tree,
That good Camrell must be.*

Faults of evill
drest trees, and
the remedy.

Beginne betime with trees, and do what you list: but if you let them grow great and stubborne, you must do as the trees list. They will not bend but breake, nor bee wound without danger. A small branch will become a bough, and a bough an arme in bignesse. Then if you cut him his wound will fester, and hardly without good skill recouer: therefore, *Obsta principijs*. Of such wounds, and lesser, or any bough cut off a handfull or more from the body, comes hollownesse, and untimely death. And therefore when you cut, strike close, and cleane, and upward, and leaue no bunch.

The forme al-
tered.

This forme in some cases sometimes may be altered: If your tree, or trees, stand neare your Walkes, if it please your fancy more, let him not breake till his boale be aboue your head: so may you walke under your trees at your pleasure. Or if you set your fruit-trees for your shades in your Groves, then I respect not the forme of the tree, but the comelinesse of the walke.

Dressing of old
trees.

All this hitherto spoken of dressing, must be understood of young plants, to be formed: it is meete somewhat be sayd for the instruction of them that have olde trees already formed, or rather deformed: for, *Malum non vitatur nisi cognitum*. The faults therefore of a disordered tree, I finde to be five:

Faults are five,
and their re-
medies.

1. An unprofitable boale.
2. Water boughes.
3. Fretters.
4. Suckers. And,
5. One principall top.

A long

A long boale asketh much feeding, and the more hee hath the more he desires, and gets (as a drunken man drinke, or a covetous man wealth) and the lesse remaines for the fruit, he puts his boughs into the aire, and makes them the fruit, and it selfe more dangered with winds: for this I know no remedy, after that the tree is come to growth, once evill, never good.

1. Long boale.

No remedy.

Water boughes, or under growth, are such boughes as grow low under others and are by them overgrowne, over shadowed, dropped on, and pind for want of plenty of sap, and by that meanes in time die: For the sap presseth upward, and it is like water in her course, where it findeth most issue, thither it floweth, leaving the other lesser fluces dry: even as wealth to wealth, and much to more. These so long as they beare, they beare lesse, worse, and fewer fruit, and waterish.

2. Water boughs.

The remedy is easie, if they be not growne greater then your arme. Lop them close and cleane, and cover the middle of the wound, the next summer when he is dry, with a selve made of tallow, tarre, and a very little pitch, good for the covering of any such wound of a great tree: unless it be bark-pild, and then fear-cloath of fresh Butter, Honey, and Waxe, presently (while the wound is greene) applied, is a soveraigne remedy in Summer especially. Some bind such wounds with a thumpe rope of Hay moist, and rub it with dung.

Remedy.

Bark-pild, and the remedy.

Fretters are when as by the negligence of the Gardener, two or moe parts of the tree, or of divers trees, armes, boughes, branches, prunings, grow so neere and close together, that one of them by rubbing, doth wound another. This fault of all other shewes the want of skill or care at least in the Arborist: for here the hurt is apparant, and the remedy easie, seene to the time, galls

as Fretters.

Touching.

Remedy.

and wounds incurable, but by taking away those members: for let them grow, and they will bee worse and worse, & so kill themselves with civill strife for roomth, and danger the whole tree. Avoid them betimes therefore, as a common wealth doth boosome enemies.

Suckers.

A Sucker is a long, proud, and disorderly Cyon, growing straight up (for pride of sap makes proud, long, and streight growth) out of any lower parts of the tree, receiving a great part of the sap, and bearing no fruit, till it have tyrannized over the whole tree. These are like idle and great Drones amongst Bees; and proud and idle members in a commonwealth.

Remedy.

The remedy of this is, as of water-boughes, unlesse he be growne greater then all the rest of the boughs, & then your Gardner (at your discretion) may leave him for his boale, and take away all, or the most of the rest. If he be little, slip him, and set him, perhaps he will take: my fairest Apple-tree was such a slip.

One principall
top or bough,
and remedy.

One or two principall top boughes are as evill, in a manner, as Suckers, they rise of the same cause, and receive the same remedy: yet these are more tolerable because these beare fruit, yea the best: but Suckers of long doe not beare.

Instruments
for dressing.

I know not how your tree should be fauley, if you reforme all your vices timely, and orderly. As these rules serve for dressing yong trees and sets in the first planting: so may they well serve to helpe old trees, though not exactly to recover them.

The Instruments fittest for all these purposes, are most commonly: For the great trees an handsome, long, light Ladder of Firpoles, a little, nimble, and strong armed Saw, and sharpe. For lesse Trees, a little and sharpe Hatchet, a broad mouthed chesell, strong and

and sharpe, with an hand-beetle, your strong and sharp Cleever with a knock, and, which is a most necessary Instrument amongst little trees, a great hafted and sharpe Knife or Whittle. And as needfull is a Stoole on the top of a Ladder of 8. or more rungs, with two backe-feet, whereon you may safely and easfully stand to graffe, to dresse, and to gather fruit thus formed: The feet may be fast wedged in: but the Ladder must hang loose with two bands of iron. And thus much of dressing trees for fruit, formerly to profit.



CHAP. 12.

Of Foiling.



Here is one thing yet very necessary to make your Orchard both better, and more lasting: Yea, so necessary, that without it your Orchard cannot last, nor prosper long, which is neglected generally both in precepts and in practise, viz. manuring with Foile: whereby it hapneth that when trees, amongst other evils, through want of farnesse to feed them, become mossie, and in their growth are evill, or, not thriving, it is either attributed to some wrong cause, as age, when indeed they are but young, or evill standing, stand they never so well, or such like, or else the cause is altogether unknowne, and so not amended.

Necessity of
of foiling.

Can there be devised any way by nature, or art, sooner or sounder to seeke out, and take away the heart and strength of earth, then by great trees? Such great bodies cannot be sustained without great store of sap. What li-

Trees great
suckers.

Great bodies

ving body have you greater then of trees? The great Sea-monsters, whereof one came a land at *Teesmouth* in *Torkeshire*, hard by us, 18. yards in length, and neere as much in compasse, seeme hideous, huge, strange, and monstrous, because they be indeed great: but especially, because they are seldome seene: But a tree liking, come to his growth and age, twice that length, and of a bulke never so great, besides his other parts, is not admired, because he is so commonly seene. And I doubt not, but if hee were well regarded from his kinnell, by succeeding ages, to his full strength, the most of them would double their measure. About fifty yeeres agoe I heard by credible and constant report, That in *Brookham Parke* in *Westmerland*, neere unto *Penrith*, there lay a blowne Oake, whose trunk was so big, that two Horsemen being the one on the one side, and the other on the other side, they could not one see another: to which if you adde his armes, boughes, and rootes, and consider of his bignesse, what would hee have beene, if preserved to the vantage. Also I read in the *History of the West-Indians*, out of *Peter Martyr*, that fixteene men taking hands one with another, were not able to fathome one of those trees about. Now Nature having given to such, a faculty by large and infinite roots, taws, and tangles, to draw immediately his substance from our common mother, the Earth (which is like in this point to all other mothers that beare) hath also ordained that the tree overloden with fruit, and wanting sap to feed all she hath brought forth, will weine all she cannot feed, like a woman bringing forth moe children at once then shee hath teats. See you not how trees especially, by kind being great, standing so thicke and close, that they cannot get plenty of sap, pine away all the grasse, weeds,

weeds, lesser shrubs, and trees, yea and themselves also for want of vigor of sap? So that trees growing large, sucking the soile whereon thy stand, continually, and amaine, and the frozen of the earth that feeds them decaying (for what is ther that waists continually, that shall not have end) must either have supply of sucken, or else leave thriving and growing. Some grounds will beare Corne while they be new, and no longer, because their crust is shallow, and not very good, and lying they scind and wash, and become barren. The ordinary Corne soiles continue not fertile, with following and foyling, and the best requires supply, even for the little body of Corne. How then can we think that any ground (how good soever) can sustaine bodies of such greatnesse, and such great feeding, without great plenty of Sap arising from good earth? This is one of the chiefe causes, why so many of our Orchards in *England* are so evill thriving when they come to growth, and our fruit so bad. Men are loth to bestow much ground, and desire much fruit, and will neither set their trees in sufficient compassse, nor yet feed them with manure. Therefore of necessity Orchards must be foiled.

The fittest time is, when your trees are grown great, and have neere hand spread your earth, wanting new Time fit for foyling. earth to sustaine them, which if they doe, they will seeke abroad for better earth, and shun that, which is barren (if they find better) as cattell evill pasturing. For nature hath taught every creature to desire and seeke his owne good, and to avoyd hurt. The best time of the yeere is at the Fall, that the Frost may bite and make it tender, and the Raine wash it into the roots. The Summer time is perillous if ye digge, because the sap stirs amaine. The best kind of Foile is such as is fat, hot, and Kind of foyle. tender.

tender. Your earth must be but lightly opened, that the dung may goe in, and wash away; and but shallow, lest you hurt the roots: and in the Spring, closely and equally made plaine againe for feare of Suckers. I could wish, that after my trees have fully possessed the soile of mine Orchard, that every seven yeeres at least, the soile were bespread with dung halfe a foot thicke at least. Puddle water out of the dunghil powred on plentifully, will not onely moisten but fatten especially in *June* and *July*. If it be thicke and fat, and applied every yeere, your Orchard shal need none other foiling. Your ground may lye so low at the River side, that the floud standing some daies and nights thereon, shall save you all this labour of foiling.

CHAP. XIII.

Of annoyances.

Chiefe helpe to make every thing good, is to avoyd the evils thereof: you shal never attaine to that good of your Orchard you looke for, unles you have a Gardner that can discern the diseases of your trees and other annoyances of your Orchard, & find out the causes therof, and know and apply fit remedies for the same. For be your ground, site, plants, and trees as you would wish, if they be wasted with hurtfull things, what have you gained but your labour for your travell? It is with an orchard & every tree, as with mans body. The best part of physicke for preservation of health, is to foresee and cure diseases.

All the diseases of an Orchard are of two sorts, either internall or externall. I call those inward hurts which breed on and in particular trees.

Two kinds
of evils in an
Orchard.

1. Galles

1 Gales.

5 Barkebound.

2 Canker.

6 Barke pild.

3 Mosse.

7 Worme.

4 Weaknes in setting. 8 Deadly wounds.

Gales, Canker, Mosse, weaknes, though they be divers diseases : yet (howsoever Authors thinke otherwise) they rise all out of the same cause.

Gales we have described with their cause and remedy, in the 11. Chapter under the name of fretters.

Canker is the consumption of any part of the tree, barke and wood, wich also in the same place is deciphered under the title of water-boughes.

Mosse is sensibly seene and knowne of all, the cause is pointed out in the same chapter, in the discourse of timber-wood, and partly also the remedy : but for Mosse adde this, that at any time in summer (the Spring is best when the cause is removed with an Haircloth, immediately after a showre of raine, rub off your Mosse or with a peece of weed (if the Mosse abound) formed like a great knife.

Weaknesse in the setting of your fruit shall you find there also in the same Chapter, and his remedy. All these flow from the want of roomth in good soile, wrong planting, Chap. 7. and evill or no dressing.

Barke-bound (as I thinke) riseth of the same cause, & the best & present remedy (the causes being takē away) is with your sharpe knife in the Spring, length-way to launch his bark throughout, on 3. or 4. sides of his boale.

The disease called the worme is thus discerned : The barke will be hoald in divers places like gall, the wood wil die and dry, & you shall see easily the bark swell. It is verily to be thought, that therein is bred some worm I have not yet throgly soght it out, because I was never

Remedy.

troubled therewithall : but onely have seene such trees in divers places. I thinke it a worme rather, because I see this disease in trees, bringing fruit of sweet tast, and the swelling shewes as much. The remedy (as I conjecture) is so soone as you perceive the wound, the next Spring cut it out barke and all, and apply Cowes pisse, and vineger presently, and so twice or thrice a weeke for a moneths space : For I well perceive, if you suffer it any time, it eates the tree or bough round, and so kils.

Since I first wrote this Treatise, I have changed my mind concerning the disease called the worme, because I read in the History of the *West-Indians*, that their trees are not troubled with the disease called the worme or canker, which ariseth of a raw and evill concocted humor or sap. Witnesse *Pliny*, by reason their country is more hot then ours, whereof I thinke the best remedy is (not disallowing the former, considering that the worme may breed by such an humor) warme standing, sound lopping and good dressing.

Barke-pild.

Barke-pild you shall find with his remedy in the 11. Chapter.

Wounds.

Deadly wounds are when a mans Arborist wanting skill, cut off armes boughes or branches an inch, or (as I see sometimes) an handfull, or halfe a foot or more from the body : These so cut cannot cover in any time with sap, and therefore they die, and dying they perish the heart, and so the tree becomes hollow, and with such a deadly wound cannot live long.

Remedy.

The remedy is, if you find him before he be perished, cut him close, as in the 11. Chapter : if he be hoald, cut him close, fill his wound, tho never so deepe, with mortar well tempered, & so close at the top his wound with a Seare-cloth doubled and nailed on, that no aire nor raine

raine approach his wound. If he be not very old, and detaining, he will recover, and the hole being closed, his wound within shall not hurt him for many yeeres.

Hurts on your trees are chiefly ants, Earewigs, and Caterpillers. Of ants and Earewigs is said Chap. 10. Let there be no swarme of Pismires neere your tree-root, no not in your Orchard, turn them over in a frost, and powre in water, and you kill them.

Hurts on trees.

Ants, Earewigs, Caterpillars, and such like wormes.

For Caterpillers, the vigilant Fruterer shall soone espy their lodging by their web, or the decay of leaves eaten round about them. And being seene, they are easily destroyed with your hand, or rather (if your tree may spare it) take sprig and all (for the red peckled butterfly doth ever put them, being her sparm, among the tender spraires for better feeding, especially in drought, and tread them under your feet. I like nothing of smoke among my trees. Vnnaturall heates are nothing good for naturall trees. This for diseases of particular trees.

Externall hurts are either things naturall or artificall. Naturall things, externally hurting Orchards.

Externall evils,

- | | | | |
|-----------|------------|----------|--------------|
| 1 Beasts. | 1 Deere. | 2 Birds. | 1 Bulfinch. |
| | 2 Goates. | | 2 Thrush. |
| | 3 Sheepe. | | 3 Blackbird. |
| | 4 Hare. | | 4 Crow. |
| | 5 Cony. | | 5 Pye. |
| | 6 Cattell. | | |
| | 7 Horfe. | | &c. |

The other things are,

- 1 Winds.
- 2 Cold.
- 3 Trees.
- 4 Weeds.
- 5 Wormes.

6 Mowles.

6 Moles.

7 Filth.

8 Poyson full smoake.

Externall wilfull evils are these.

1 Walls.

2 Trenches.

3 Other works noisome done in or neere

4 Evill Neighbours. (your Orchard.

5 A carelesse Master.

6 An undiscreeet, negligent or no keeper.

See you here an whole army of mischiefes banded in troupes against the most fruitfull trees the earth bears? affailing your good labours. Good things have most enemies.

Remedy.

Deere, &c.

A skilfull Fructerer must put to his helping hand, & disband and put them to flight.

For the first rank of beasts, besides your out strong fence, you must have a faire and swift Grey hound, a stone-bow, gun, and if need require, an apple with an hooke for a Deere, and an Hare-pipe for an Hare.

Birds.

Your Cherries and other berries when they be ripe, will draw all the Blacke birds, Thrushes, and Maw-Pies to your Orchard. The Bul-finch is a devourer of your Fruit in the bud, I have had whole trees shald out with them in Winter-time.

Remedy.

The best remedy here is a stone-bow, a Piece, especially if you have a musket or Spar-hawke in Winter to make the Blacke-birde stoope into a bush or hedge.

Other trees.

The Gardner must cleanse his foile of al other trees: but fruit-trees aforesaid Chapter 2. for which it is ordained, and I would especially name Oakes, Elmes, Ashes, and such other great wood, but that I doubt it should be takē as an admission of lesser trees: for I admit
of

of nothing to grow in mine Orchard but fruit and flowers. If sap can hardly be good to feed our fruit-trees, why should we allow of any other, especially those, that will become their masters, & wrong them in their livelihood

And although we admit without the fence of Wall-nuts in most plaine places, Trees middlemost, and ashes or Okes, or Elmes utmost, set in comely rowes equally distant with faire Allies twixt row and row to avoide the boisterous blasts of winds, and within them also others for Bees; yet we admit none of these into your Orchard-plat: other remedy then this have we none against the nipping frosts. Winds.

Weeds in a fertile soile (because the generall curse is so) till your Trees grow great, will be noysome, and deforme your allies, walkes, beds, and squares, your under Gardners must labour to keepe all cleanly & handsome from them, and all other filth with a Spade, weeding knives, rake with iron teeth: a skrapple of Iron thus formed. Frosts.



For Nettles and ground-Iuy after a showre.

When weeds, straw, stickes, and all other scrapings are gathered together, burn them not, but bury them under your crust in any place of your Orchard, and they will die and fatten your ground. Weeds.

Wormes and Moales open the earth, and let in aire to the roots of your trees, and deforme your squares and walkes, and feeding in the earth, being in number infinite, draw on barrenesse. Remedy.

Wormes may easily be destroyed. Any Summer evening when it is darke, after a showre with a candle, you may fil bushels, but you must tread nimbly, & where you Wormes.

you cannot come to catch them so, fitt the earth with coale ashes an inch or two thicknes, and that is a plague to them, so is sharpe gravell.

Moales will anger you, if your Gardener or some skilfull Moale-catcher ease you not, especially having made ther fortresses among the roots of your trees: you must watch her well with a Moal-spare, at morn, noon, and night, when you see her utmost hill, cast a Trench betwixt her & her home (for she hath a principall mansion to dwell and breed in about *Aprill*, which you may discern by a principall hil, wherein you may catch her, if you trench it round and sure, and watch well) or wheresoever you can discern a single passage (for such she hath) there trench, and watch, and have her.

Wilfull annoyances.

Remedy.

Wilfull annoyances must be prevented and avoyded by the love of the Master and Fruterer, which they beare to their Orchard.

Iustice and liberality will put away evill neighbours or evill neighbour-hood. And then (if God blesse and give successe to your labours) I see not what hurt your Orchard can sustaine.

CHAP. XIIII.

Of the age of Trees.



Tis to be considered: All this Treatise of trees tends to this end, that men may love and plant Orchards, whereunto there cannot be a better inducement then that they know (or at least be perswaded) that all that benefit they shall reape thereby, whether of pleasure or profit, shall not be for a day or a month, or one, or many (but many hundred) yeeres. Of good things the greatest, and most durable is alwaies the best. If therefore out of reason

reason grounded upon experience, it be made (I thinke) manifest, but I am sure probable, that a fruit-tree in such a soile and site, as is described so planted and trimmed and kept, as is afore appointed, and duely soiled, shall dure 1000. yeeres, why should we not take paines, and be at two or three yeeres charges (for under seven yeeres will an Orchard be perfected for the first planting, and in that time be brought to fruit) to reape such a commodity and so long lasting.

The age of trees.

Let no man thinke this to be strange, but peruse and consider the reason. I have Apple trees standing in my little Orchard, which I have knowne these forty yeeres, whose age before my time I cannot learne, it is beyond memory, though I have enquired of divers aged men of 80. yeeres and upwards: these trees although come into my possession very evill ordered, mishapen, and one of them wounded to his heart, and that deadly (for I know it will be his death) with a wound wherein I might have put my foot in the heart of his bulke (now it is lesse) notwithstanding, with that small regard they have had since, they so like, that I assure my selfe they are not come to their growth by more then 2. parts of 3. which I discern not onely by their owne growth, but also by comparing them with the bulke of other trees. And I find them short (at least) by so many parts in bignesse, although I know those other fruit-trees to have beene much hindered in their stature by evill guiding. Here-
hence I gather thus.

Gathered by reason out of experience.

If my trees be a hundred yeeres old, and yet want two hundred of their growth before they leave increasing, which make three hundred, then wee must needs resolve, that this three hundred yeeres are but the third part of a trees life, because (as all things living besides)

Parts of a trees age.

so trees must have allowed them for their increase one third, another third for their stand, and a third part of time also for their decay. All which time of a Tree amounts to nine hundred yeeres, three hundred for increase, three hundred for his stand, whereof wee have the tearme stature, and three hundred for his decay, and yet I thinke, for we must conjecture by comparing, because no one man liveth to see the full age of trees, I am within the compasse of his age, supposing alwaies the foresaid meanes of preserving his life. Consider the age of other living creatures. The Horse and moiled Oxe wrought to an untimely death, yet double the time of their increase. A Dog likewise increaseth three, stands three at least, and in as many, or rather more, decays.

Mans age.

Every living thing bestowes the least part of his age in his growth, and so must it needs be with trees. A man comes not to his full growth and strength (by common estimation) before thirty yeeres, and some slender and clean bodies not till 40. so long also stands his strength, and so long also must we have allowed by course of nature to decay. Ever supposing that he be well kept with necessaries, and from and without straines, bruises, and all other domineering diseases. I will not say upon true report, that Physicke holds it possible, that a cleane body kept by these three Doctours, *Doctour Diet*, *Doctour Quiet*, and *Doctour Merriman*, may live neere a hundred yeeres. Neither will I here urge the long yeeres of *Methushalah* and those men of that time, because you will say Mans daies are shortned since the flood. But what hath shortned them? God for mans sinnes: but by meanes, as want of knowledge, evill government, riot, gluttony, drunkenness, and (to be short) the encrease of the

the curse, our sins increasing in an iron and wicked age.

Now if a man, whose body is nothing, in a manner, but tender rottenesse, whose course of life cannot by any meanes, by counsell, restraint of lawes, or punishment, nor hope of praise, profit, or eternall glory, be kept within any bounds, who is degenerate cleane from his naturall feeding, to effeminate nicenesse, and cloying his body with excesse of meat, drinke, sleepe, &c. and to whom nothing is so pleasant and so much desired, as the causes of his owne death, as idlenesse, lust, &c. may live to that age: I see not but a tree of a solid substance, not damnified by heate or cold; capable of, and subject to any kinde of ordering or dressing that a man shall apply unto him, feeding naturally, as from the beginning disburdened of all superfluities, eased of, and of his owne accord avoiding the causes that may annoy him, should double the life of a man, more then twice told; and yet naturall Phylosophy, and the universall consent of all Histories tell us, that many other living creatures farre exceed man in the length of yeeres: As the Hart and the Raven. Thus reporteth that famous *Roterodam* out of *Hesiodus*, and many other Historiographers. The testimony of *Cicero* in his booke *De Senectute*, is weighty to this purpose: that we must *in posteris aetatibus ferere arbores*, which can have none other sense: but that our fruit-trees whereof he speakes, can endure for many ages.

What else are trees in comparison with the earth: but as haire to the body of a man? And it is certaine, without poisoning, evill and distemperate diet, and usage, or other such forcible cause, the haire dure with the body. That they be called excrements, it is by reason of their superfluous growth: for cut them as often as you list,
and

and they will still come to their naturall length) Not in respect of their substance , and nature. Haires endure long, and are an ornament and use also to the body , as trees to the earth.

So that I resolve upon good reason , that fruit-trees well ordered, may live and like a thousand yeeres , and beare fruit, and the longer, the more, the greater , and the better , because his vigour is proud and stronger, when his yeares are many : You shall see old trees put their buds and blossomes both sooner and more plentifully then yong trees by much. And I sensibly perceive my yong trees to enlarge their fruit, as they grow greater, both for number , and greatnesse. Yong Heiffers bring not forth Calves so faire, neither are they so plentiful to milke , as when they become to bee old Kine. No good Houfwife will breed of a young but of an old bird-mother : It is so in all things naturally, therefore in trees.

The age of
timber-trees.

And if fruit-trees last to this age, how many ages is it to be supposed, strong and huge timber-trees will last? whose huge bodies require the yeeres of divers *Methushalaes*, before they end their daies, whose sap is strong and bitter , whose barke is hard and thicke , and their substance solid and stiffe : all which are defences of health and long life. Their strength withstands all forcible winds , their sap of that quality is not subject to wormes and tainting. Their barke receives seldome or never by casualty any wound. And not onely so, but he is free from removals, which are the death of millions of trees, where as the fruit-tree in comparison is little, and often blowne downe, his sap sweet, easily, and soone rainted, his barke tender, and soone wounded, and himselfe used by man, as man useth himselfe, that is either
unskil.

unskillfully or carelessly.

It is good for some purposes to regard the age of your fruit trees, which you may easily know, till they come to accomplish twenty yeeres, by his knots: Reckon from his roote up an arme, and so to his top twig, and every yeeres growth is distinguished from other by a knot, except lopping or removing doe hinder.

Age of trees
discerned.

CHAP. XV.

Of gathering and keeping Fruit.

Although it be an easie matter, when God shall send it, to gather and keepe fruit, yet are they certaine things worthy your regard. You must gather your fruit when it is ripe, and not before, else will it wither and be tough and sowre. All fruit generally are ripe, when they beginne to fall. For Trees doe as all other bearers doe, when their young ones are ripe, they will waine them. The Dove her Pigeons, the Cony her Rabbits, and women their children. Some fruit tres sometimes getting a taint in the setting with a frost or evill winde, will cast his fruit untimely: but not before he leave giving them sap, or they leave growing. Except from this foresaid rule, Cherries, Damsons, and Bullies. The Cherry is ripe when he is sweld wholly red, & sweet: Damsons & Bullies not before the first frost.

General Rule

Cherries, &c.

Apples are knowne to be ripe, partly by their colour, growing towards a yellow, except the Leather-coat and some Peares and Greening.

Apples.

Timely Summer fruit will be ready, some at Midsummer, most at Lammas for present use; but generally no keeping fruit before *Michaeltide*. Hard Winter fruit and Wardens longer.

When.

F

Gather

Dry stalkes.

Gather at the full of the Moone for keeping, gather dry for feare of rotting.

Gather the stalkes with all: for a little wound in fruit, is deadly: but not the stumpe, that must beare the next fruit, nor leaves, for moysure putrifier.

Severally.

Gather every kind severally by it selfe, for all will not keepe alike, and it is hard to discerne them, when they are mingled.

Overladen trees.

If your trees be over-laden (as they will be, being ordered, as is before taught you) I like better of pulling some off (though they bee not ripe) neere the top end of the bough, then of propping by much, the rest shall bee better fed. Propping puts the bough in danger, and frets it at least.

Instruments.

Instruments: a long ladder of light Firre: a stoole-ladder, as in the 11. chapter. A gathering apron like a poake before you, made of purpose, or a wallet hang on a bough, or a basket with a fyve bottome, or skin bottome, with lathes or splinters under, hang in a rope to pull up and downe: bruise none, every bruise is to fruit death: if you doe, use them presently. An hooke to pull boughs to you is necessary, breake no boughes.

Bruises.

Keeping.

For keeping, lay them in a dry Loft, the longest keeping Apples fit stand fittest on dry straw, on heapes ten or fourteene dayes, thicke, that they may sweat. Then dry them with a soft and cleane cloath, and lay them thin abroad. Long keeping fruit would be turned once in a moneth softly: but not in nor immediately after frost. In a loft cover well with straw, but rather with chaffe or bran: For frost doth cause tender rottenesse.

CHAP.

CHAP. XVI.

Of Profits.

NOW pause with your selfe, and view the end of all your labours in an Orchard: unspeakable pleasure, and infinite commodity. The pleasure of an Orchard I referre to the last Chapter for the conclusion: and in this Chapter, a word or two of the profit, which thoroughly to declare is past my skill: and I count it as if a man should attempt to adde light to the Sun with a Candle, or number the Stars. No man that hath but a meane Orchard or iudgement but knowes, that the commodity of an orchard is great: Neither would I speake of this being a thing so manifest to all, but that I see, that through the carelesse lazinesse of men, it is a thing generally neglected. But let them know, that they lose hereby the chiefeest good which belongs to house-keeping.

Compare the commodity that commeth of halfe an acre of ground, set with fruit-trees and herbes, so as is prescribed, and an whole acre (say it be two) with Corn, or the best commodity you can with, and the Orchard shall exceed by divers degrees.

In France and some other Countries, and in England, they make great use of Cyder and Perry, thus made: Dresse every Apple, the stalk, upper end, and all galls away; stamp them, & strain them, and within 24 houres run them up into cleane, sweet, and sound vessels, for feare of evil ayre, which they wil readily take: and if you hang a poakefull of Cloves, Mace, Nutmegs, Cinamon, Ginger, and pils of Lemmons in the midst of the vessel, it will make it as wholesome and pleasant as wine. The like usage doth Perry require.

Cydar and
Perry.

These drinkes are very wholsome, they coole, purge and prevent hot Agues. But I leave this skill to Physicians.

Fruit.

The benefit of your Fruit, Roots and Hearbs, though it were but to eate and sell, is much.

Waters.

Waters distilled of Roses, Woodbind, Angelica, are both profitable and wondrous pleasant, and comfortable.

Conserve.

Saffron and Licoras will yeeld you much Conserves and preserves, are ornaments to your Feasts, health in your sickenesse, and a good helpe to your friend, and to your purse.

Hee that will not bee moved with such unspeakeable profits, is well worthy to want, when others abound in plenty of good things.

CHAP. XVII.

Ornaments.

ME thinkes hitherto we have but a bare Orchard for fruit, and but halfe good, so long as it wants those comely Ornaments, that should give beauty to all our labours, and make much for the honest delight of the owner and his friends.

Delight the
chiefe end
of Orchard.

For it is not to bee doubted : but as God hath given man things profitable, so hath hee allowed him honest comfort, delight, and recreation in all the works of his hands. Nay, all his labours under the Sunne without this are troubles, and vexation of mind : For what is greedy gaine, without delight, but moyling, and turmoyling in slavery ? But comfortable delight, with content, is the good of every thing, and the patterne of heaven. A morsell of bread with comfort, is better by much then a fat Oxe with unquietnesse. And who

who can deny, but the principall end of an Orchard, is the honest delight of one wearied with the works of his lawfull calling? The very workes of, and in an Orchard and Garden, are better then the ease and rest of and from other labours. When God hath made man after his owne Image, in a perfect state, and would have him to represent himselfe in authority, tranquillity, and pleasure upon the earth, he placed him in *Paradise*. What was *Paradise*? but a Garden and Orchard of trees and hearbs, full of pleasure? and nothing there but delights. The gods of the earth, resembling the great God of heaven in authority, Majesty, and abundance of all things, wherein is their most delight? and whither doe they withdraw themselves from the troublesome affaires of their estate, being tyred with the hearing and judging of litigious Controversies? choked (as it were) with the close ayres of their sumptuous buildings, their stomacks cloyed with variety of Banquets, their cares filled and overburthened with tedious discourfings? whither? but into their Orchards? made and prepared, dressed and destinated for that purpose, to renue and refresh their senses, and to call home their over-wearied spirits. Nay, it is (no doubt) a comfort to them, to set open their Cazements into a most delicate Garden and Orchard, whereby they may not onely see that, wherein they are so much delighted, but also to give fresh, sweet, and pleasant ayre to their Galleries and Chambers.

An Orchard
delightfome.

An Orchard in
Paradise.

Causes of wearisomenesse.

Orchard is the
remedy.

And looke what these men do by reason of their greatness and ability, provoked with delight, the same doubtlesse would every of us do, if power were answerable to our desires, whereby we shew manifestly, that of all other delights on earth, they that are taken by Orchards,

All delight in
Orchards.

This delights
all the senses.

are most excellent and most agreeing with nature.

For whereas every other pleasure commonly fills some one of our senses, and that onely, with delight, this makes all our senses, swim in pleasure and that with infinite variety, joyed with no lesse commodity.

Delighteth old
age.

That famous *Philosopher*, and matchlesse Oratour, M. T. C. prescribeth nothing more fit, to take away the tediousnesse and heavy load of three or fourescore yeeres, then the pleasure of an Orchard.

Causes of de-
light in an Or-
chard.

What can your eye desire to see, your eares to heare, your mouth to taste, or your nose to smell, that is not to be had in an Orchard, with abundance of variety? What more delightful then an infinite variety of sweet smelling flowers? decking with sundry colours, the greene mantle of the Earth, the universall mother of us all, so by them be spotted, so dyed, that all the World cannot sample them, and wherein it is more fit to admire the Dyer, then imitate his workmanship. Colouring not only the earth but decking the ayre, and sweetning every breath and spirit.

Flowres.

The Rose red, dammaske, velvet, and double double province Rose, the sweet muske Rose double and single, the double and single white Rose. The faire and sweet senting Woodbine, double and single, and double double. Purple Cowslips, and double Cowslips, and double double Cowslips. Primrose double and single. The Violet nothing behind the best, for smelling sweetly. A thousand more will provoke your content.

Borders and
squares.

And all these, by the skill of your Gardener, so comely, and orderly placed in your Borders and Squares, and so intermingled that none looking thereon cannot but wonder, to see, what Nature corrected by Art can doe.

When

When you behold in divers corners of your Orchard *Mounts* of stone, or wood curiously wrought ^{Mounts.} within and without, or of earth covered with fruit-trees: Kentish Cherry, Damsons, Plummes, &c. with ^{whence you may shoot a Bucke.} staires of precious workmanship. And in some corner (or moe) a true Dyall or Clocke, and some Anticke- ^{Dyall.} workes, and especially silver-sounding Musique, mixt ^{Musique.} Instruments and voices, gracing all the rest: How will you be wrapt with delight?

Large Walkes, broad and long, close and open, like ^{Walkes.} the *Temple* groves in *Theffalie*, railed with gravell and sand, having seats and banks of Cammomile, all this de- ^{Seates.} lights the minde, and brings health to the body.

View now with delight the workes of your owne hands, your fruit-trees of all sorts, loaden with sweet ^{Order of trees.} blossomes, and fruit of all tastes, operations, and colours: your trees standing in comely order which way soever you looke.

Your borders on every side hanging and drooping with Feberries, Raspberries, Barberries, Currents, and the rootes of your trees powdred with Strawberries, red, white, and greene, what a pleasure is this? Your Gardner can frame your lesser wood to the shape of men armed in the field, ready to give battell: or swift ^{Shape of men and beasts.} running Greyhounds: or of well sented and true running Hounds, to chase the Deere, or hunt the Hare. This kind of hunting shall not waste your corne, nor much your coyne.

Mazes well framed a mans height, may perhaps make ^{Mazes.} your friend wander in gathering of berries, till he cannot recover himselfe without your help.

To have occasion to exercise within your Orchard: it shall be a pleasure to have a Bowling Alley, or rather ^{Bowling-Alley.} (which

Buts.

(which is more manly, and more healthfull) a paire of Buts, to stretch your armes.

Herbes.

Rosemary and sweete Eglantine are seemely ornaments about a Doore or Window, and so is Woodbinde,

Conduit.

Looke Chapter 5. and you shall see the forme of a Conduite. If there were two or more, it were not amisse.

River.

And in mine opinion, I could highly commend your Orchard, if either through it, or hard by it there should runne a pleasant River with silver streames: you might sit in your Mount, and angle a peckled Trout, or sleighty Eele, or some other dainty Fish. Or moats,

Moats.

whereon you might row with a Boate, and fish with Nettes.

Bees.

Store of Bees in a dry and warme Bee-house, comely made of Fir-boords, to sing, and sit, and feede upon your flowers and sprouts, make a pleasant noise and sight. For cleanly and innocent Bees, of all other things, loue and become, and thrive in an Orchard. If they thrive (as they must needs, if your Cardiner bee skilfull, and love them: for they love their friends, and hate none but their enemies) they will, besides the pleasure, yeeld great profit, to pay him his wages. Yea, the increase of twenty Stockes or Stooles, with other fees, will keepe your Orchard.

You need not doubt their stings, for they hurt not whom they know, and they know their keeper and acquaintance. If you like not to come amongst them, you need not doubt them: for but neere their store, and in their owne defence, they will not fight, and in that case onely (and who can blame them?) they are manly, and fight desperately. Some (as that honorable Lady

at *Hacknes*, whose name doth much grace mine Orchard) use to make seats for them in the stone wall of their Orchard, or Garden, which is good, but wood is better.

A Vine over-shadowing a seate, is very comely, though Vine.
her Grapes with us ripe slowly.

One chiefe grace that adornes an Orchard, I cannot let slip: A brood of Nightingales, who with severall Birds.
Nightingale. notes and tunes, with a strong delightfome voyce, out of a weake body, will beare you company night and day She loves (and lives in) hots of woods in her hart. She will helpe you to cleanse your trees of Caterpillers, and all noysome wormes and flies. The gentle Robin-red- Robin-red-
breft. breft will helpe her, and in winter in the coldest stormes will keepe a part. Neither will the silly Wren be behind Wren. in Summer, with her distinct whistle (like a sweet Recorder) to cheere your spirits.

The Black-bird and Threstle (for I take it the Thrush Blake-bird.
Thrush. sings not, but devours) sing loudly in a *May* morning, and delights the eare much (and you need not want their company, if you have ripe Cherries or Berries, and would as gladly as the rest doe your pleasure:) But I had rather want their company than my fruit.

What shall I say? A thousand of Pleasant delights are attended in an Orchard: and sooner shall I bee weary, then I can reckon the least part of that pleasure, which one that hath and loves an Orchard, may finde therein.

What is there of all these few that I have reckoned, which doth not please the eye, the eare, the smell, and taste? And by these senses as Organes, Pipes, and windows, these delights are carried to refresh the gentle, generous, and noble mind.

To

Your owne
labour.

To conclude, what joy may you have, that you living to such an age, shall see the blessings of God on your labours while you live, and leave behind you to heires or successors (for God will make heires) such a worke, that many ages after your death, shall record your love to their Countrey? And the rather, when you consider (*Chap. 14.*) to what length of time your worke is like to last.

FINIS.

THE
COUNTRY HOUSE-WIVES
GARDEN,

Containing Rules for Hearbs and Seeds
of Common use, with their times and seasons
when to set and sow them.

Together,
With the Husbandry of Bees, published
with secrets very necessary for every House-
wife: As also diverse new Knots for Gardens.

The Contents see at large in the last Page.

Genes. 2. 29.

*I have given unto you every Herbe, and every tree, that shall bee to you for
meate.*



LONDON,

Printed by Anne Griffin for Iohn Harrison, at the Golden
Vnicorne in Pater-noster-row. 1637.

1871

John H. ...

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THE COUNTRY-HOUSEWIVES GARDEN.

CHAP. I.

The Soyle.



He soyle of an Orchard and Garden, differ onely in these three points: First, the Gardens soyle would bee some-^{Dry.} what dryer, because herbes being more tender then trees, can neyther abide moysture nor drought, in such excessive measure, as trees; and therefore having a dryer soyle, the remedy is easie against drought, if need be: water soundly, which may be done with small labour, the compasse of a Garden being nothing so great, as of an Orchard, and this is the cause (if they know it) that Gardners raise their squares: but if moysture trouble you, I see no remedy without a generall danger, except in Hops, which delight much in a low^{Hops.} and sappy earth.

Secondly, the soyle of a Garden would be plaine and
levell,

Plaine.

levell, at least every square (for we purpose the square to be the first forme) The earth of a garden wanting such helps, as I have said, which an orchard hath, is more easily washed away, and more annoyed by drought, and the soyle being mellow and loose, is soone either washt away, or sends out his heart by too much drenching and washing.

Thirdly, if a garden soyle bee not cleere of weedes, and namely, of grasse, the hearbes shall never thrive: for how should good herbes prosper, when evill weeds wax so fast: considering good herbes are tender in respect of evill weeds: these being strengthened by nature, and the other by art? Gardens have small place in comparison, and therefore may be more easily fallowed, at the least one halfe yeare before, and the better dressed after it is framed. And you shall finde this cleare reason both not onely, for the danger of gathering weeds, which is a speciall ornament, and leaves more room for your tender herbes.



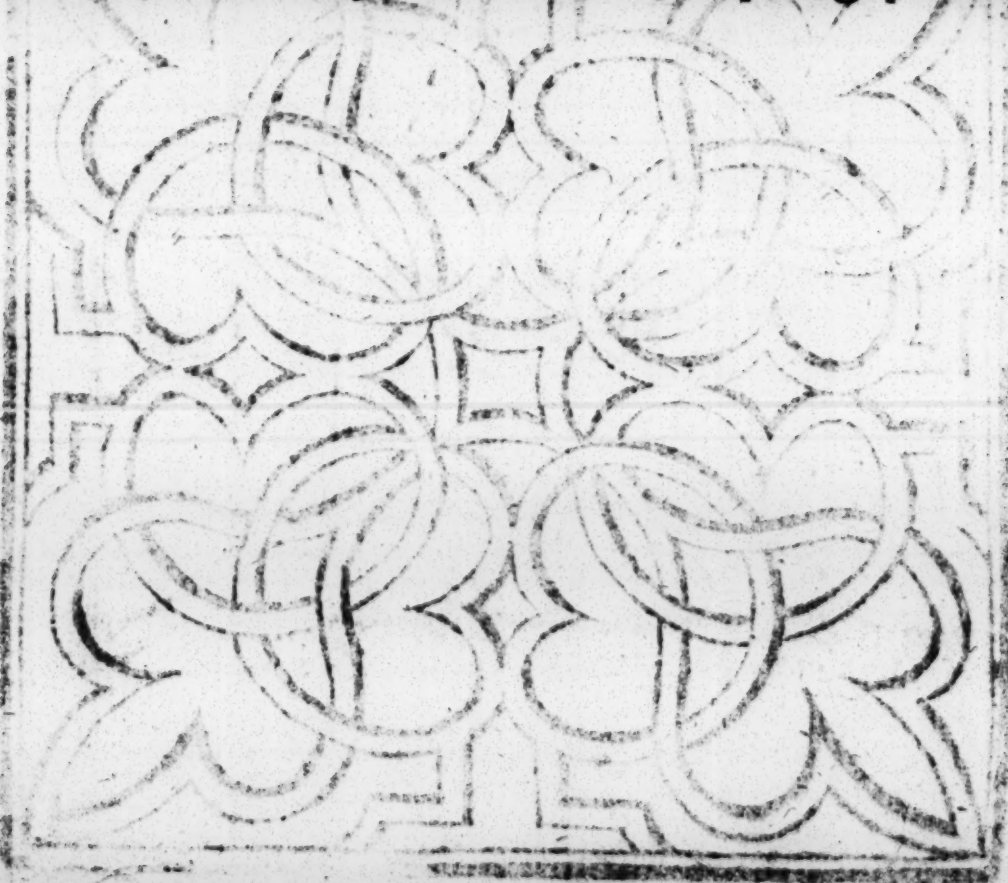
I cannot see in any sort, how the life of the one, should not be good, and fit for the other: The ends of both being one good, wholesome, and much fruit joyed with delight, while trees be more able to abide the nipping frosts, then tender herbes: but I am sure, the flowers of trees are as soone perished with cold, as any herb except Pumpions, and Melons.

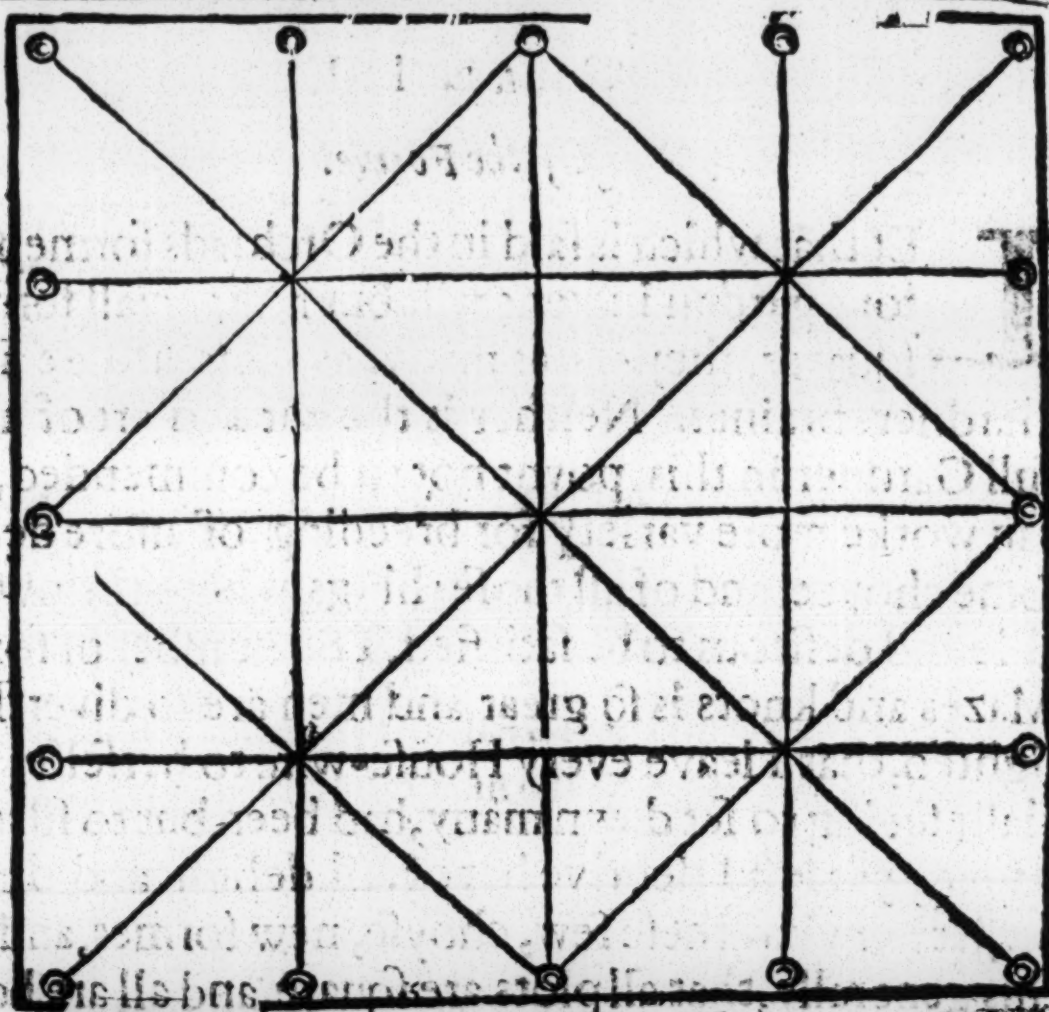
CHAP.

CHAP. III.

Of the Forme.

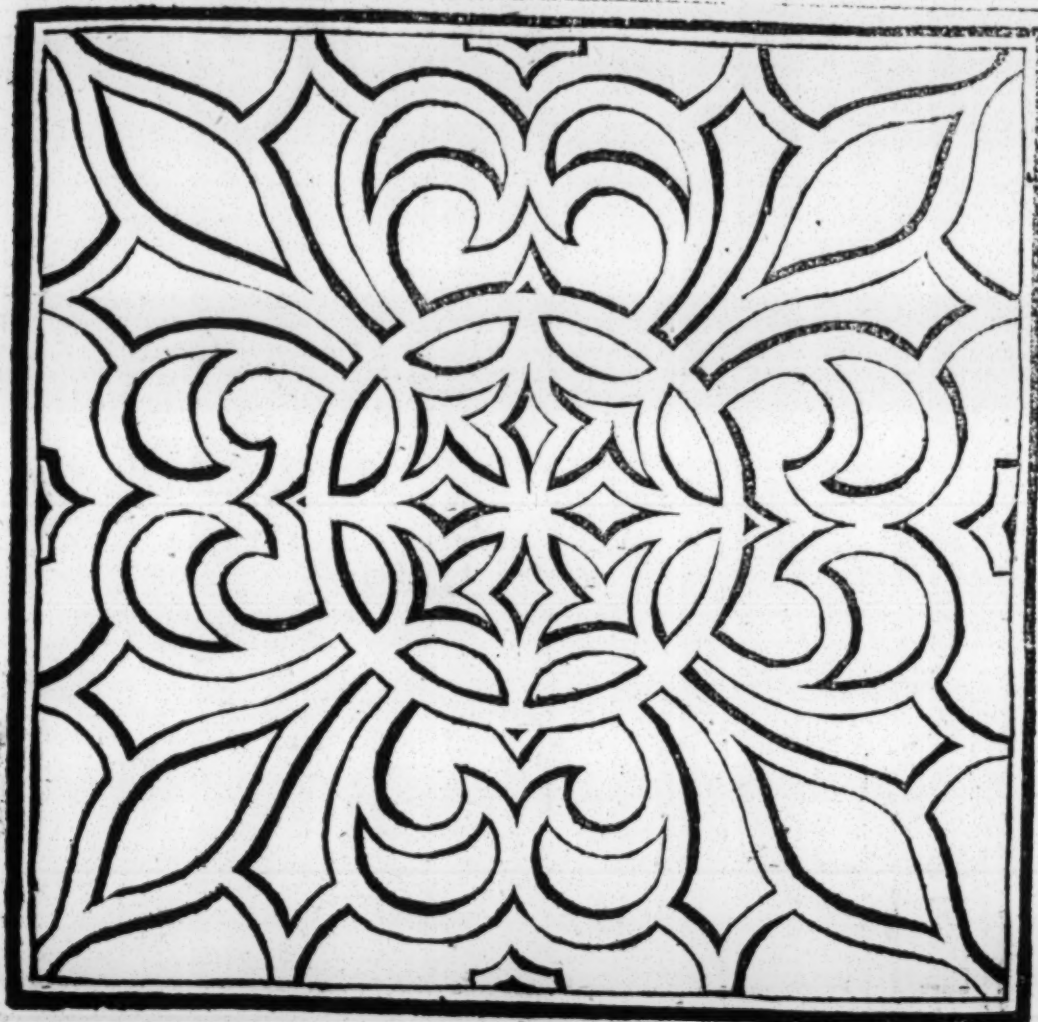
LEt that which is said in the Orchards forme suffice for a garden in generall: but for speciall formes in squares, they are as many, as there are devices in Gardners braines. Neither is the wit and art of a skillfull Gardner in this poynt not to be commended, that can worke more variety for breeding of more delight-
some choyce, and of all those things, where the owner is able and desirous to be satisfied. The number of formes, Mazes and knots is so great, and men are so diversly delighted, that I leave every House-wife to herselfe, especially seeing to set down many, had been but to fill much paper; yet lest I deprive her of all delight and direction, let her view these few, choyse, new formes, and note this generally, that all plots are square, and all are bordered about with Privet, Railins, Fea-berries, Roses, Thorn, Rosemary, Bee-flowers, Isop, Sage, or such like.



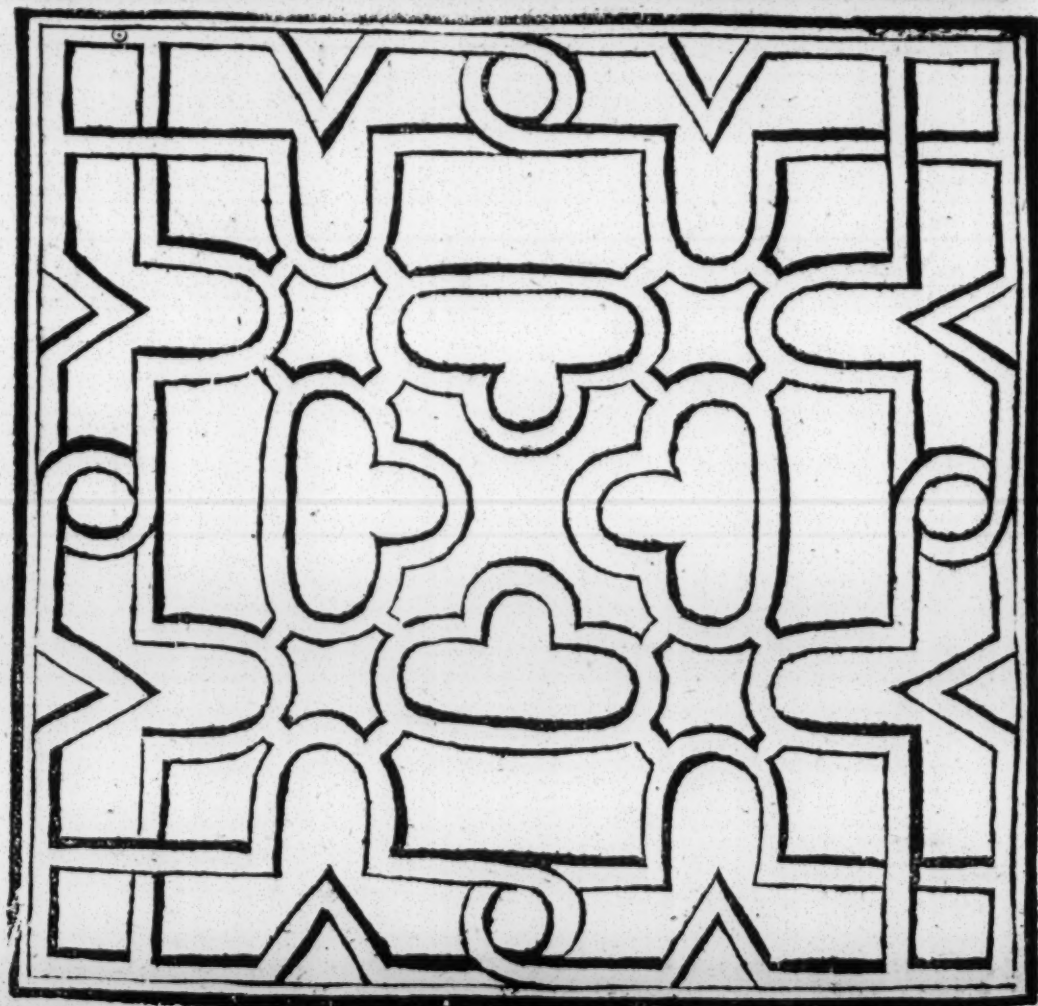
The ground
plot for knots.

Ginkfoyle.



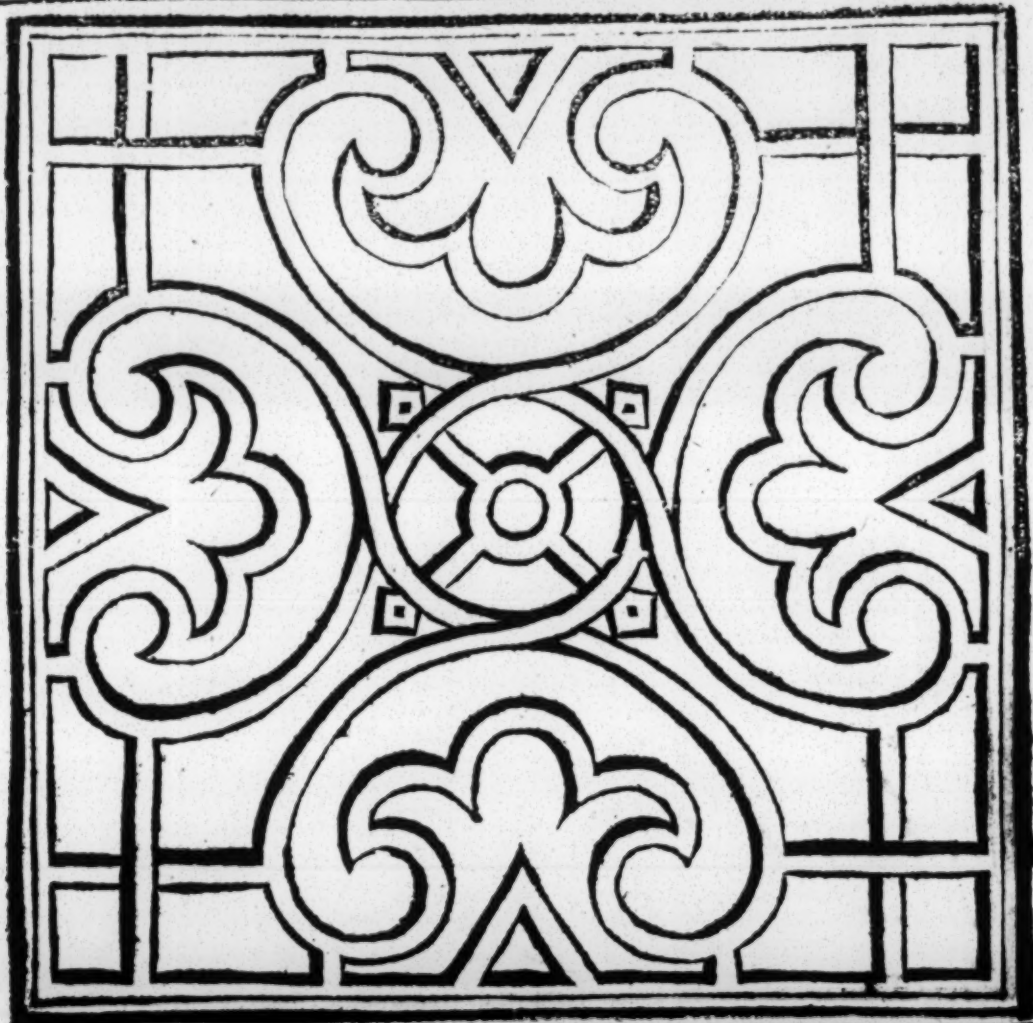


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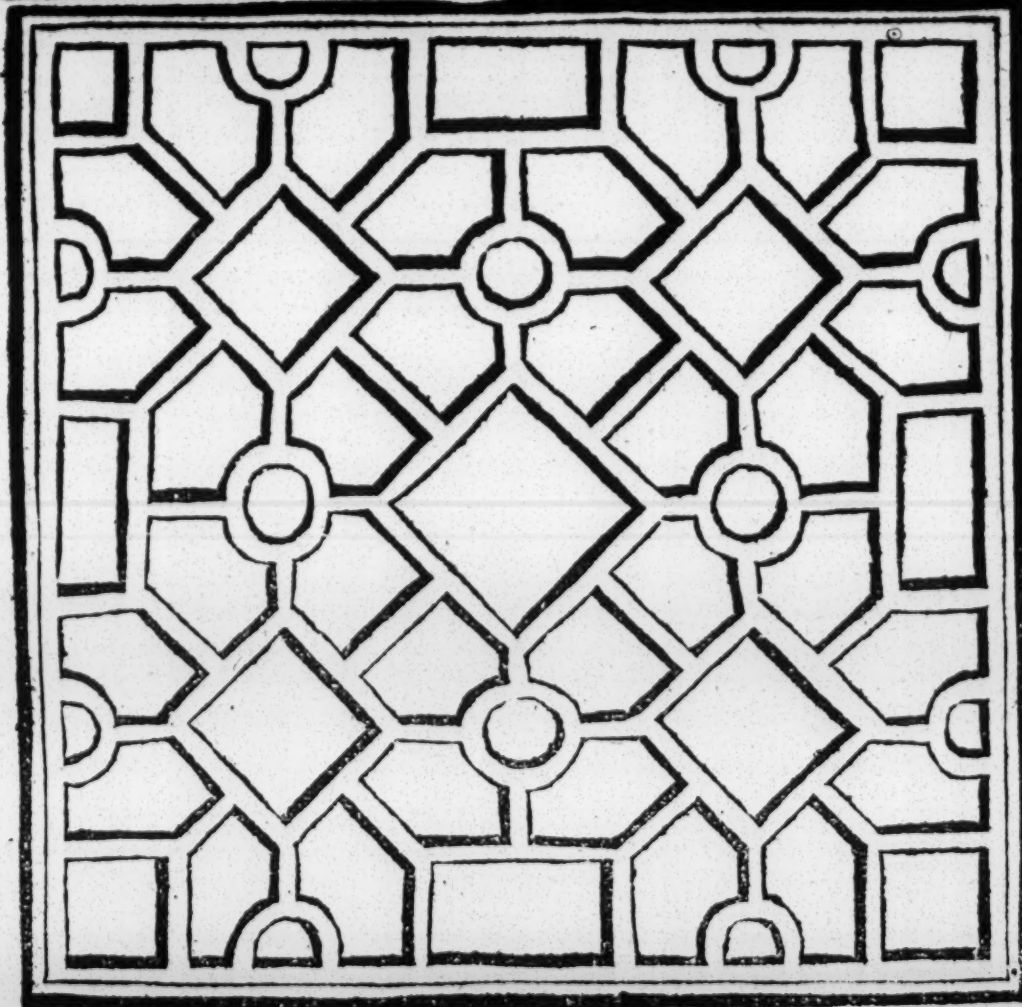


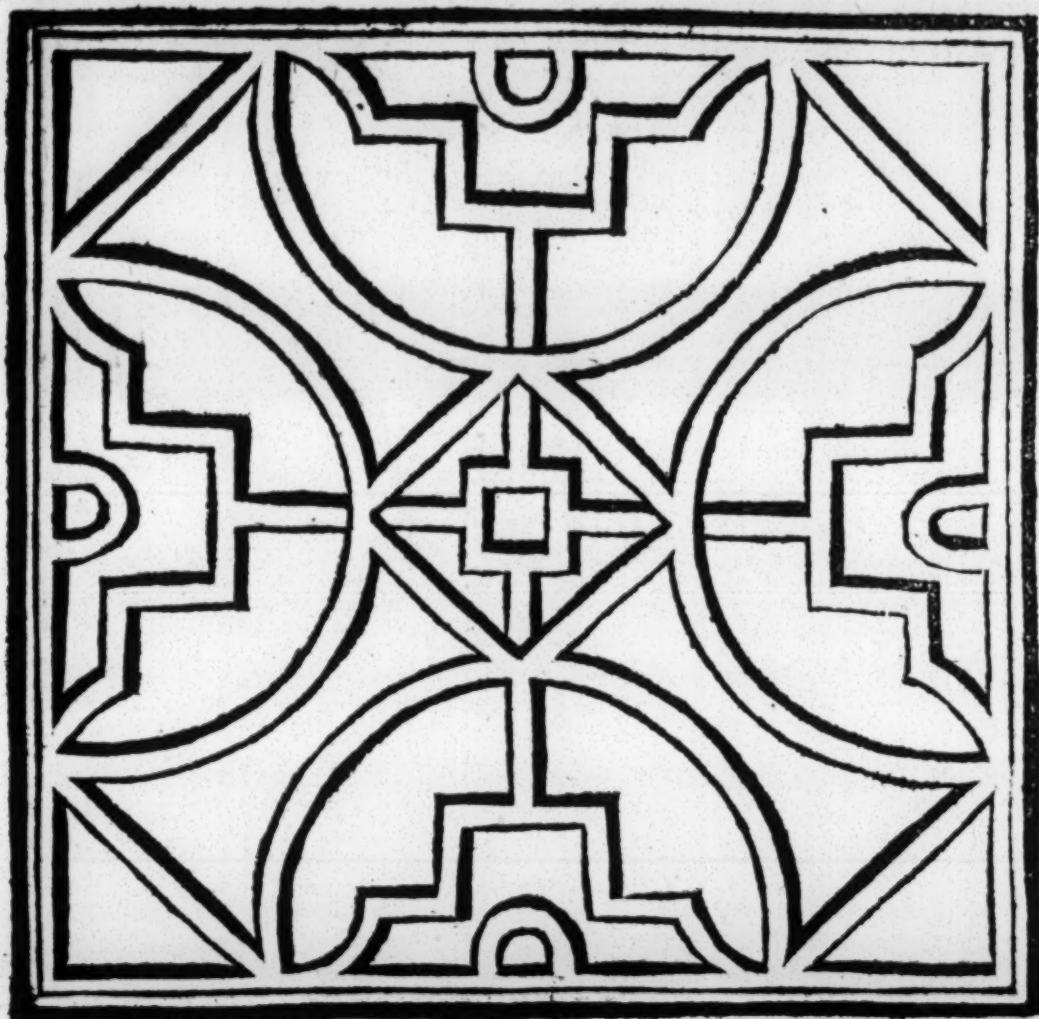
The tree-foile-

The Fret.

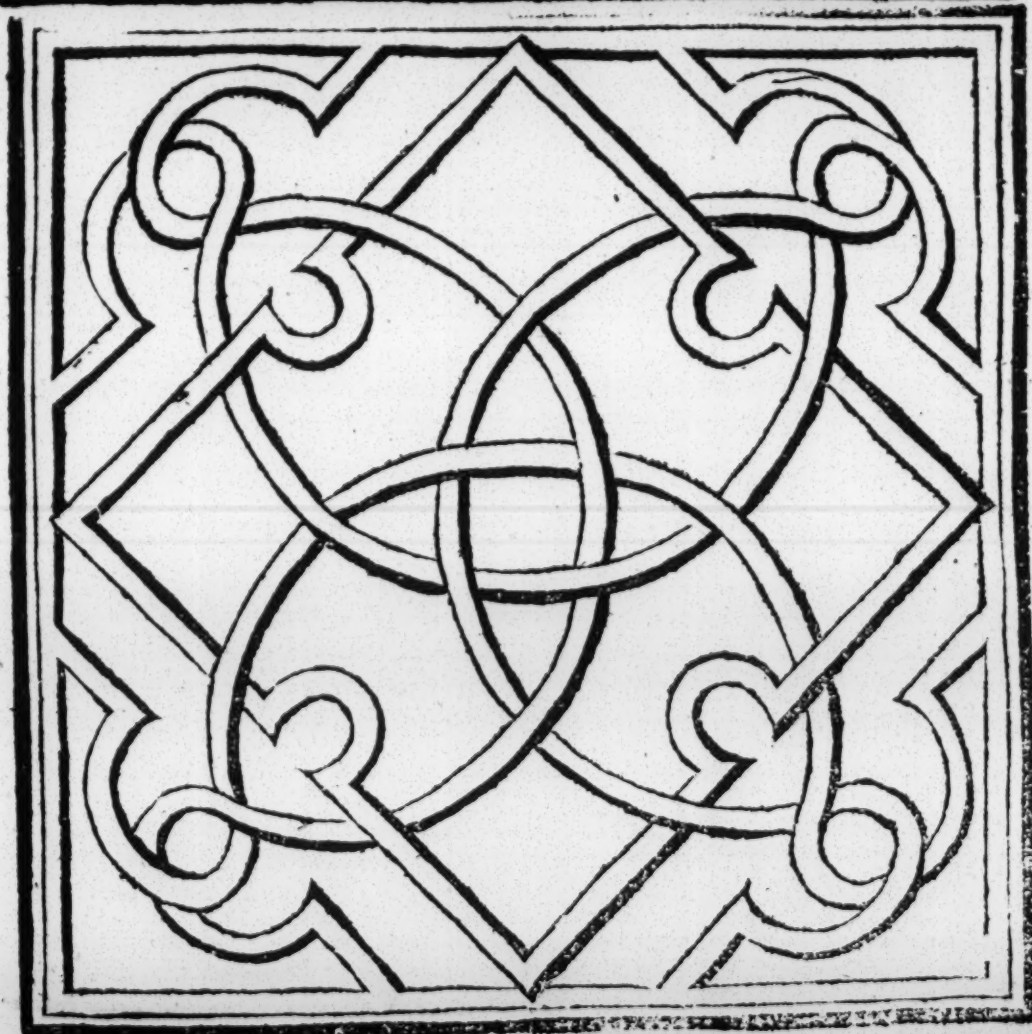


Lozengers.



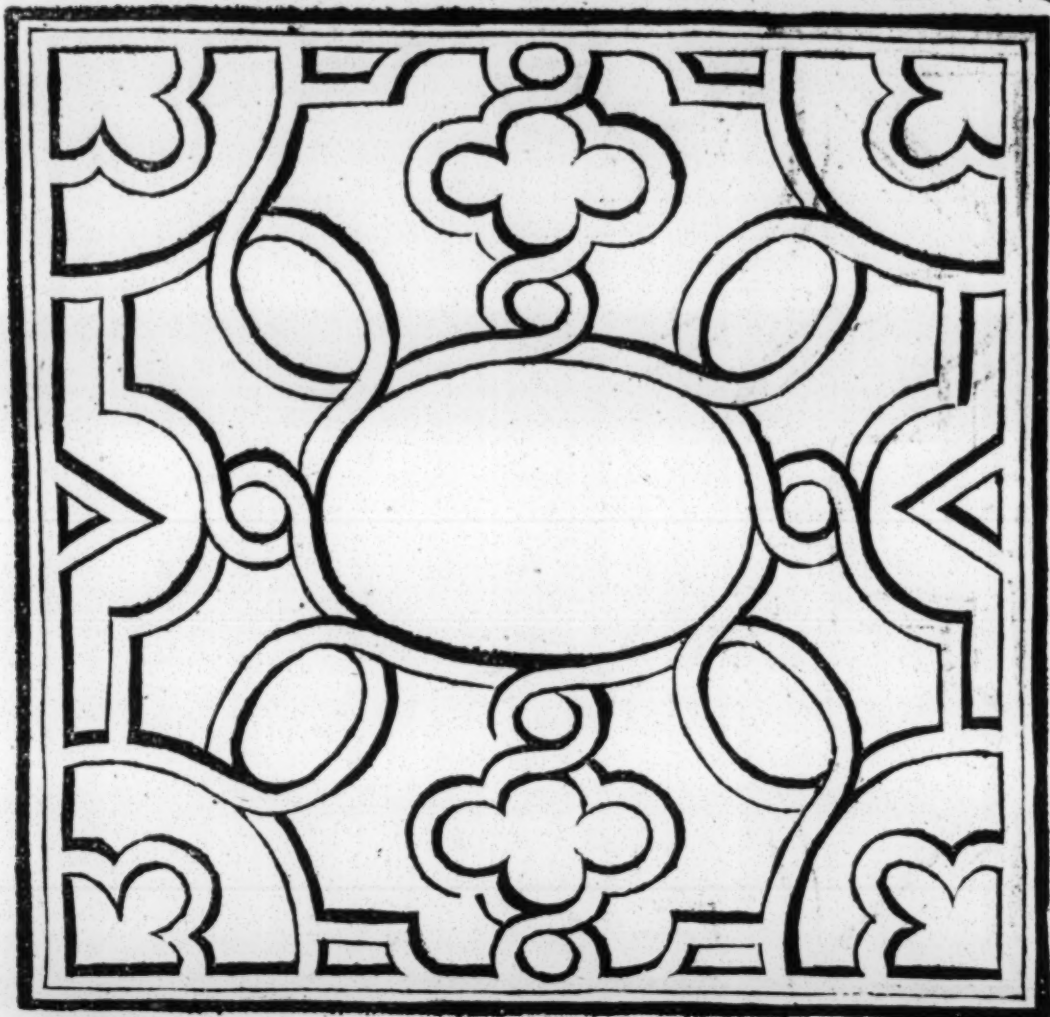


Crosse bow.

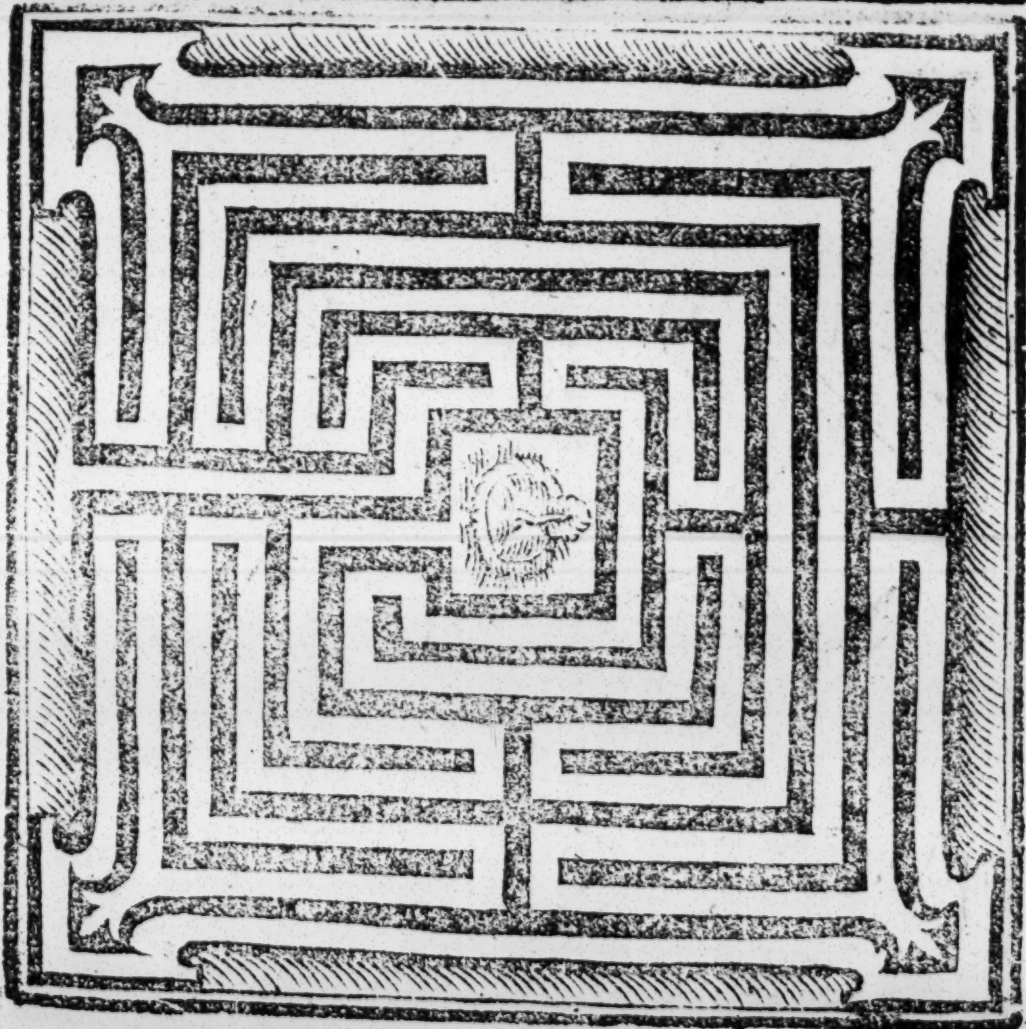


Diamond.

●vall.



●laze.



CHAP. IV.

Of the Quantity.

A Garden requireth not so large a scope of ground as an Orchard, both in regard of the much weeding, dressing and removing, and also the paines in a Garden is not so well repaied home, as in an Orchard. It is to be granted, that the Kitchin garden doth yeeld rich gaines by berries, roots, cabbages, &c. yet these are no way comparable to the fruits of a rich Orchard: but notwithstanding I am of opinion, that it were better for *England*, that we had more Orchards and Gardens, and more large. And therefore wee leave the quantity to every mans ability and will.

CHAP. V.

Of Fence.

Seeing wee allow Gardens in Orchard plots, and the benefit of a Garden is much, they both require a strong and shrowding fence. Therefore leaving this, let us come to the herbs themselves, which must bee the fruite of all these labours.

CHAP. VI.

Of two Gardens.

Erbes are of two sorts, and therefore it is meete (they requiring divers manners of Husbandry) that we have two Gardens: A garden for flowers, and a Kitchen garden: or a Summer garden: not that wee meane so perfect a distinction, that the Garden for flowers should or can bee without herbs good for the Kitchin, or the Kitchin garden should want flowers, nor on the contrary: but for the most part they would bee severed: first, because your Garden flowers shall suffer some disgrace, if among them you intermingle Onions, Parsnips, &c. Secondly, your Garden that is durable, must be of one forme: but that which is for your Kitchens use, must yeeld daily roots, or other herbes, and suffer deformity. Thirdly, the herbs of both will not be both alike ready, at one time, either for gathering, or removing. First therefore.

Of the Summer Garden.

THese herbes and flowers are comely and durable for squares and knots, and all to be set at *Michaeltide*, or somewhat before, that they may be settled in, and taken with the ground, before winter, though they may be set, especially sowne in the spring.

Roses of all sorts (spoken of in the Orchard) must be set. Some use to set slips and twine them, which sometimes, but seldome thrive all.

Rose-

Rosemary, Lavender, Bee-flowers, Isop, Sage, Time, Cowslips, Pyony, Daisies, Clove Gilliflowers, Pinckes, Sothernewood, Lillies, of all which hereafter.

Of the Kitchen Garden.

THough your Garden for flowers doth in a sort peculiarly challenge to it selfe a profit, and exquisite forme to the eyes, yet you may not altogether neglect this, where your herbs for the pot doe grow. And therefore, some here make comely borders with the herbes aforesaid. The rather because abundance of Roses and Lavender yeeld much profit, and comfort to the senses: Rose-water and Lavender, the one cordiall (as also the Violets, Burrage, and Buglas) the other reviving the spirits by the sence of smelling: both most durable for smell, both in flowers and water: you need not here raise your beds, as in the other garden, because Summer towards, will not let too much wet annoy you.

And these herbes require more moysture: yet must you have your beds divided, that you may goe betwixt to weede, and somewhat forme would be expected: To which it availeth, that you place your herbes of biggest growth, by walles, or in borders, as Fenell, &c. and the lowest in the middest, as Saffron, Strawberries, Onions, &c.

CHAP. VII.

Division of Herbs.

Arden herbs are innumerable, yet these are common and sufficient for our country House-wifes.

Herbs of the greatest growth.

Fennell, Anglica, Tansie, Hollihock, Lovage, Elly Campana, French mallowes, Lillies, French poppy, Endive, Succory and Clary.

Herbs of middle growth.

Burrage, Buglas, Paisley, sweet Sicilly, Floure-deluce, Stocke Gilliflowers, Wall-flowers, Anniseeds, Coriander, Fether fewell, Marigolds, Oculus Christi, Langdibeeffe, Alexanders, Carduus benedictus.

Herbes of smallest growth.

Pansy, or Harts-ease, Coast Margerum, Savery, Strawberries, Saffron, Lycoras, Daffadownedillies, Leekes, Chives, Chibals, Skerots, Onions, Batcheilors buttons, Daiesies, Peniroyall.

Hitherto I have onely reckoned up, and put in this rancke, some herbes. Their Husbandry follow each in an Alphabetical order, the better to be found.

CHAP. VIII.

Husbandry of Herbs.

Alexanders are to be renewed as Angelica. It is a timely pot-herbe.

Angelica is renewed with his seed, where he beareth plenty the second yeere, & so dieth. You may remove the roots the first yeare. The leaves distilled

distilled, yeeld water soveraign to expel paine from the stomacke. The roote dried taken in the fall, itoppeth the poares against infections.

Annyseeds make their growth, and beareth seeds the first yeere, and dieth as *Coriander*: it is good for opening the pipes, and it is used in Comfits.

Artichokes are renued by dividing the rootes into sets, in *March*, every third or fourth yeare. They require a severall usage, and therefore a severall whole plot by themselves, especially considering they are plentiful of fruit much desired.

Burrage and *Buglas*, two Cordials, renue themselves by seed yearely, which is hard to be gathered: they are exceeding good Pot-herbes, good for Bees, and most comfortable for the heart and stomacke, as *Quinces* and *Wardens*.

Camomile, set rootes in bankes and walkes. It is sweet smelling, qualifying head-ach.

Cabbages require great roome, they seed the second yeere: sow them in *February*, remove them when the plants are an handfull long, set deepe and wet. Looke well in drought for the white Caterpillers worme, the spaunes under the leafe cloley: for every living Creature doth seeke food and quiet shelter, and growing quicke, they draw to, and eate the heart: you may find them in a rainy dewy morning.

It is a good Pot herbe, and of this herbe called *Cole*, our Country House-wives give their pottage their name, and call them *Caell*.

Cardus Benedictus, or blessed thistle, seeds and dyes the first yeere, the excellent vertue thereof I referre to Herbals, for we are Gardiners, not Physitians.

Carrets are sowne late in *April* or *May*, as Turneps,
else

else they seed the first yeere, and then their rootes are naught : the second yeare they dye, their rootes grow great, and require large roome.

Chibals or *Chives* have their rootes parted, as Garlick, Lillies, &c. and so are they set every third or fourth yeere : a good pot herbe opening, but evill for the eyes.

Clarie is sowne, it seeds the second yeere, and dyes. It is somewhat harsh in taste, a little in pottage is good, it strengtheneth the reines.

Coast, Rootes parted make sets in *March* : it beares the second yeare: it is used in Ale in *May*.

Coriander is for usage and uses, much like Anni-seeds.

Daffadowne-dillies have their rootes parted, and set once in three or foure yeare, or longer time. They flower timely, and after *Midsummer*, are scarcely scene. They are more for ornament, then for use, so are Daifies.

Daise-rootes parted and set, as Flowre-deluce and Camomile, when you see them grow too thicke or decay. They bee good to keepe up, and strengthen the edges of your borders, as Pinkes, they bee red, white, mixt.

Ellycampane root is long lasting, as is the Lovage, it seeds yeerely, you may divide the root, and set the root, taken in Winter it is good (being dried, powdered and drunke to kill itches.

Endive and *Succory* are much like in nature, shape, and use, they renue themselves by seed, as Fennell, and other herbs. You may remove them before they put forth shankes, a good Pot-herbe.

Fennell is renued, either by the seeds (which it beareth the second yeere, and so yeerely in great abundance) sowne in the fall or Spring, or by dividing one root into so many Sets, as Artichoke, it is long of growth
and

and life. You may remove the root unshankt. It is exceeding good for the eyes, distilled, or any otherwise taken: it is used in dressing Hives for swarmes, a very good Pot herbe, or for sallets.

Fetherfewe shakes seed. Good against a shaking Fever, taken in a posset drinke fasting.

Flowre-deluce, long lasting. Divide his roots, and set: the rootes dried have a sweet smell.

Garlicke may bee set an handfull distance, two inches deepe, in the edge of your beds. Part the heads into severall cloves, and every clove set in the latter end of *February*, will increase to a great head before *September*: good for opening, evill for eyes: when the blade is long, fast two and two together, the heads will be bigger.

Hollyhocke riseth high, seedeth and dyeth: the chiefe use I know is ornament.

Isop is reasonable long lasting: young roots are good set, slips better. A good pot-herbe.

Iuly-flowres, commonly called *Gilly flowers*, or *Clowe-Iuly flowers* (I call them so, because they flowre in *Iuly*) they have the name of *Cloves*, of their sent. I may well call them the King of flowers (except the Rose) and the best sort of them are called *Queene-Iuly flowers*. I have of them nine or tenne severall colours, and divers of them as big as Roses: of all flowers (save the Damaske Rose) they are the most pleasant to sight and smell: they last not past three or foure yeares unremoved. Take the slips (without shanks) and set any time, save in extreme frost, but especially at *Michael-tide*. There use is much in ornament, and comforting the spirits, by the sence of smelling.

Iuly-flowres of the wall, or wall-*Iuly flowres*, wall-flowres, or Bee-flowres, or Winter-*Iuly-flowers*, because

cause growing in the walles, even in Winter, and good for Bees, will grow even in stone walles, they will seeme dead in Summer, and yet revive in winter. They yeeld feede plentifully, which you may sow at any time, or in any broken earth, especially on the top of a mud-wall, but moist, you may set the root, before it be brancht, every slip that is not flowr'd. will take root, or crop him in Summer, and he will flowre in winter: but his winter-seed is untimely. This and Palmes are exceeding good, and timely for Bees.

Leekes yeeld feed the second yeere, unremoved and die, unlesse you remove them, usuall to eate with salt and bread, as Onyons alwayes greene, good pot-herb, evill for the eyes.

Lavender Spike would be removed within 7 yeeres, or eight at the most. Slips twined as Isop and Sage; would take best at *Michaell-tide*. This flower is good for bees, most comfortable for smelling, except *Roses*: and kept dry, is as strong after a yeare, and when it is gathered. The water of this is comfortable.

White *Lavender* would be removed sooner.

Letice yeelds feede the first yeare, and dyes: sow be-time, and if you would have them *Cabbage* for Sallets, remove them as you doe *Cabbage*. They are usuall in Sallets, and the pot.

Lillies white and red, removed once in three or foure yeeres, their roots yeeld many Sets, like the *Garlicke* *Michael-tide* is the best: they grow high, after they get roote: these roots are good to breake a Byle, as are *Mallowes* and *Sorrell*.

Mallowes, French or gagged, the first or second yeere, feed plentifully: sow in *March* or before, they are good for the house-wifes pot; or to breake a bunch.

Marigold

Marigolds most commonly come of seed, you may remove the plants, when they be two inches long. The double Marigold, being as bigge as a little Rose, is good for shew. They are a good Pot-herbe.

Oculus Christi, or Christs eye, seeds and dyes the first or second yeere : you may remove the young Plants, but seed is better : one of these seeds put into the eye, within three or foure houres will gather a thick skin, cleere the eye, and bolt it selfe forth without hurt to the eye. A good Pot-herbe.

Onions are sowne in *February*, they are gathered at *Michaeltide*, and all the Summer long, for Sallets; as also young Parsly, Sage, Chibals, Lettice, sweet Sicilly, Fennell, &c. good alone, or with meate as mutton, &c. for sauce, especially for the pot.

Parsly, sow the first yeere, and use the next yeere : it feedes plentifully, an herbe of much use, as sweet Sicily is. The seed and roots are good against the Stone.

Parsneps require and whole plor, they bee plentifull and common : sow them in *February*, the Kings (that is in the middle) seed broadest and reddest. Parsneps are sustenance for a strong stomacke, not good for evill eies. When they cover the earth in a drought, to tread the tops, makes the rootes bigger.

Penny-royall, or Pudding Grasse, creepes along the ground, like ground Ivy. It lasts long, like Daiesies, because it puts and spreads daily new roots. Divide and remove the roots, it hath a pleasant taste and smell, good for the pot, or hackt meate, or Haggas Pudding.

Pumpeons : Set feedes with your finger, a finger deepe late in *March*, and so soone as they appeare, every night if you doubt frost, cover them, and water them continually out of a water-pot : they bee very tender,
thier

their fruit is great and waterish.

French Poppy beareth a faire flower, and the seed will make you sleepe.

Raddish is sauce for cloyed stomacks, as Capers, Olives, and Cucumbers, cast the seeds all Summer long here and there, and you shall have them alwaies young and fresh.

Rosemary, the grace of herbs here in *England*, in other Countries common. To set slips immediately after *Lammas*, is the surest way. Seede sowne may prove well, so they bee sowne in hot weather, somewhat moist, and good earth: for the herbe, though great, is nesh and tender (as I take it) brought from hot Countries to us in the cold North: set thinne. It becomes a Window well. The use is much in meates, more in Physicke, most for Bees.

Rue, or *Herbe of Grace*, continually greene, the slips are set. It lasts long as *Rosemary*, *Sothernewood*, &c. too strong for mine Housewifes pot, unlesse shee will brue Ale therewith, against the Plague: let him not seed, if you will have him last.

Saffron every third yeere his roots would be removed at *Midsummer*: for when all other herbs grow most, it dyeth. It flowreth at *Michael-tide*, and groweth all Winter: keepe his flowers from birds in the morning, and gather the yellow (or they shpe much like Lillies) dry, and after dry them: they be precious, expelling diseases from the heart and stomacke.

Savery seeds and dies the first yeere, good for my Housewifes pot and pye.

Sage: set slips in *May*, and they grow aye: Let it not seed, it will last the longer. The use is much and common. The Monkish Proverbe is *tritum*:

Cum moriatur homo, cum salvia crescit in horto?

Skerots, the rootes are set when they be parted, as *Pyonie*,

onie, and Flower-deluce at *Michaeltide*: the roote is but small and very sweet. I know none other speciall use but the Table.

Sweet *Sicily*, long lasting, pleasantly tasting, either the seed sowne, or the root parted, and removed, makes increase, it is of like use with Parsley.

Strawberries, long lasting, set roots at *Michael-tide* or the Spring, they be red, white and green, and ripe, when they be great and soft, some by *Midsummer* with us. The use is: they will coole my Housewife well, if they be put in Wine or Creame with Sugar.

Time, both seeds, slips and rootes are good. If it seed not, it will last three or foure yeeres or more, it smelleth comfortably. It hath much use: namely, in all cold meats, it is good for Bees.

Turnep is sowne. In the second yeere they beare plenty of seed: they require the same time of sowing that Carrets doe: they are sicke of the same disease that Cabbages be. The root increaseth much, it is most wholesome, if it be sowne in a good and well tempered earth: Sovereaigne for eyes and Bees.

I reckon these herbs only, because I teach my Country Housewife, not skilfull Artists, and it should be an endlesse labour, and would make the matter tedious to reckon up, *Landibeeffe*, *Stocke-Iulyflowers*, *Charnall*, *Valerian*, *Go-to bed at noone*, *Piony*, *Licoras*, *Tansie*, *Garden mints*, *German-der*, *Centaurie*, and a thousand such Physicke Herbs. Let her first grow cunning in this, and then she may enlarge her Garden as her skill and ability increaseth. And to helpe her the more, I have set her downe these observations.

CHAP.

CHAP. I X.

Generall Rules in Gardening.

IN the South parts Gardening may bee more timely, and more safely done, then with us in Yorkeeshire, because our ayre is not so favourable, nor our ground so good.

2 Secondly most seeds shakt, by turning the good earth, are renewed, their mother the earth keeping them in her bowels, till the Sun their Father can reach them with his heat.

3 In setting herbs, leave no top more then an handfull above the ground, nor more then a foot under the earth.

4 Twine the rootes of those slips you set, if they will abide it. Gilly-flowers are too tender.

5 Set moist, and sow dry.

6 Set slips without shakkes any time, except at Midsummer, and in frosts.

7 Seeding spoiles the most rootes, as drawing the heart and sap from the root.

8 Gather for the pot and medecines, herbs tender and Greene, the sap being in the top, but in Winter the root is best.

All the herbes in the Garden for flowers, would once in seven yeeres bee renewed, or soundly watered with puddle water, except Rosemary.

10 In all your Gardens and Orchards, bankes and seates of Camomile, Penny-royall, Daifies and Violets, are seemely and comfortable.

11 These require whole plots : Artichokes, Cabbages, Turneps, Parineps, Onyons, Carrets, (and if you will)

will) Saffron and Skerrits.

12 Gather all your ſeeds, dead, ripe, and dry.

13 Lay no dung to the roots of your hearbs, as uſually they doe: for dung not melted is too hot, even for trees.

14 Thin ſetting and ſowing (ſo the rootes ſtand not paſt a foot diſtance) is profitable, for the hearbs will like the better. Greater hearbs would haue more diſtance.

15 Set and ſow hearbs in their time of growth (except at *Mid-ſummer*, for then they are too too tender) but trees in their time of reſt.

16 A good Houſewife may, and will gather ſtore of hearbs for the pot, about *Lammæ*, and dry them, and pownd them, and in Winter they will make good ſervice.

Thus have I lined out a Garden to our Countrey Houſewives, and given them rules for common hearbs. If any of them (as ſometimes they are) be knotty, I referre them to Chap. 3. The ſkill and paines of weeding the Garden with weeding knives or fingers, I refer Weeding to themſelues, and their maides, willing them to take the opportunitie after a ſhowre of raine: withall, I aduiſe the Miſtreſſe, either be preſent her ſelfe, or to A good note. teach her maides to know hearbs from weeds.

CHAP. 10.

The Husbandry of Bees.

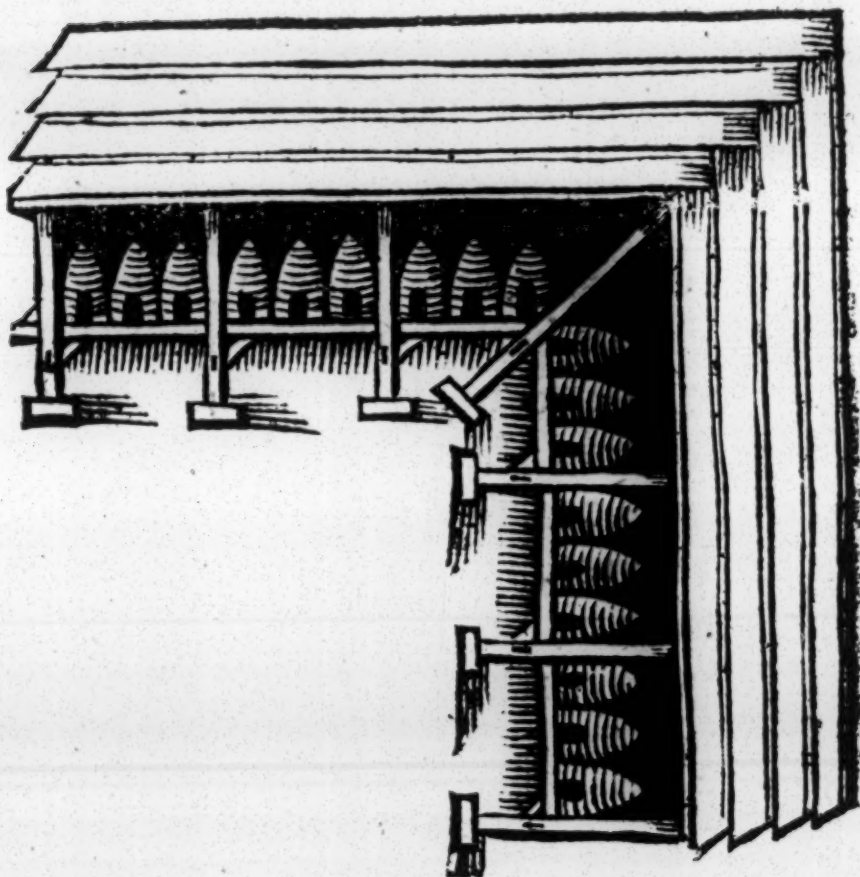
Here remaineth one necessary thing to be prescribed, which in mine opinion makes as much for ornament as either Flowers, or forme, or cleanness, and I am sure as commodious as any of, or all the rest: which is Bees, well ordered. And I will not account her any of my good House-wives, that wanteth either Bees or skillfulness about them. And though I know some have written well and truly, and others more plentifully upon this theme: yet somewhat have I learned by experience (being a Bee-master my selfe) which hitherto I cannot find put into writing, for which I thinke our House-wives will count themselves beholding unto me.

Bee-house.

The first thing that a Gardiner about Bees must be careful for, is an house not stakes and stones abroad, *Sub. aio:* for stakes rot and reele, raine and weather eate your hives, and covers, and cold most of all is hurtfull for your Bees. Therefore you must have an house made along a sure dry wall in your Garden, neere, or in your Orchard: for Bees love flowers and wood with their hearts.

This

This is the forme; a Frame itanding on polts with a Floore (if you would have it hold more Hives, two



Floores boarded) layd on bearers, and backe posts, covered over with boords, slate-wise.

Let the floores be without holes or clifts, lest in casting time, the Bees lye out, and loyter.

And though your Hives stand within an hand-breadth the one of another: yet will Bees know their home.

In this Frame may your Bees stand drie and warme, especially if you make dores like dores of windowes to shroud them in Winter, as in an house: provided you leave the Hives mouthes open. I my selfe

H 2

have

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have devised such an house, and I find that it keepes and strengthens my Bees much, and my Hives will last fixe to one.

Hives.

M. *Markham* commends hives of wood; I discommend them not: but straw hives are in use with us, and I thinke, with all the world, which I commend for nimblenesse, closenesse, warmnesse and drinesse. Bees love no externall motions of dawbing, or such like. Sometimes occasion shall be offered to lift and turne Hives, as shall appeare hereafter. One light entire Hive of straw, in that case is better, than one that is dawbed, weighty and combersome. I wish every hive, for a keeping swarme, to hold three pecks at least in measure. For too little hives procure Bees, in casting time, either to lye out, and loyter, or else to cast before they be ripe and strong, and so make weake swarmes and untimely: Whereas if they have roome sufficient, they ripen timely, and casting seasonably, are strong, and fit for labour presently. Neither would the hive be too too great, for then they loyter, and waste meate and time.

Hiving of
Bees.

Your Bees delight in wood, for feeding, especially for casting: therefore want not an Orchard. A *Mayer* swarme is worth a Mares Foale: if they want wood, they be in danger of flying away. Any time before *Mid-summer* is good for casting, and timely before *Iuly* is not evill. I much like M. *Markhams* opinion for hiving a swarme in combes of a dead or forsaken hive, so they be fresh and cleanly. To thinke that a swarme of your owne or others, will of it selfe come into such an hive, is a meere conceit, *Experto crede Roberto*. His smearing with honey, is to no purpose, for the other Bees will eate it up. If your swarme knit in the top of a tree, as they will, if the wind beate them not to fall
downe

downe: let the stoole or ladder described in the Orchard, doe you service.

The lesse your Spelkes are, the lesse is the waste of your hony, and the more easily will they draw, when you take your Bees. ^{Spelkes.} Foure Spelks a thwart, and one top Spelke are sufficient. The Bees will fasten their combs to the Hive. A little hony is good: but if you want, Fennell will serve to rub your hive withall. The hive being drest and ready spelkt, rubd and the whole made for their passage (I use no hole in the hive, but a piece of wood haol'd to save the hive and keepe out Mice) shake in your Bees, or the most of them (for al commonly you cannot get) the remainder will follow. Many use smoke, Netles, &c. which I utterly dislike, for Bees love not to be molested. Ringing in time of casting is a meere fancy, violent handling of them is simply evill, because Bees of all other creatures, love cleanness and peace. Therefore handle them leasurely and quietly, and their Keeper whom they know, may doe with them, what hee will without hurt: Being hived at night, bring them to their seat. Set your hives all of one yeere together.

Signes of breeding, if they be strong.

- 1 They will avoid dead young Bees and Droanes.
- 2 They will sweat in the morning, till it runne from them alwayes when they be strong.

Signes of casting.

- 1 They will fly Droanes, by reason of heat.
- 2 The young swarme will once or twice in some faire season, come forth mustering, as though they wou'd cast, to prove themselves and goe in againe.
- 3 The night before they cast, if you lay your eare to the Hives mouth, you shall heare two or three, but espe-

cially one above the rest, cry, Vp, up, up; or, Tout, tout, tout, like a trumpet, sounding the alarm to the battell.

Much descanting there is, of, & about the Master-Bee, and their degrees, order and government: but the truth in this point is rather imagined, then demonstrated. There are some conjectures of it, viz. we see in the combs divers greater houses then the rest, and we heare commonly the night before they cast, sometimes one Bee, sometimes two or more Bees, give a loud and severall sound from the rest; and sometime Bees of greater bodies then the common sort: but what of all this? I leane not on coniectures, but love to set downe that I know to be true, and leave these things to them that love to divine. Keepe none weake, for it is hazard, oftentimes with losse: feeding will not helpe them: for being weak, they cannot come down to meat, or if they come down, they dye, because Bees weake cannot abide cold. If none of these, yet will the other Bees being strong, smell the honey, and come and spoile and kill them. Some helpe is in casting time, to put two weake swarmes together, or as *M. Markham* well saith: Let not them cast late, by raising them with wood or stone: but with impes (say I.) An Impe is three or foure wreathes, wrought as the hive, the same compasse, to rase the hive withall: but by experience in tryall, I have found out a better way by Clustering, for late or weak swarmes hitherto not found out of any that I know. That is this: After casting time, if I have any stocke proud, and hindered from timely casting, with former Winters poverty, or evill weather in casting time, with two handles and crookes, fitted for the purpose, I turne up that stock so pestered with Bees, and set it on the crowne, upon which so turned with the mouth upward, I place another empty hive well drest,

Catching.

Clustering.

dress, and spelkt, into which without any labour, the Swarme that would not depart, and cast, will presently ascerd, because the old Bees have this quality (as all other breeding creatures have) to expell the young when they have brought them up.

There will the swarme build as kindly, as if they had of themselves beene cast. But be sure you lay betwixt the hives some straight and cleanly stick or stickes, or rather aboard with holes, to keepe them asunder: otherwise they will ioyn their workes together so fast, that they cannot be parted. If you so keepe them asunder at *Michael-tide*, if you like the waight of your swarme (for the goodnesse of swarmes is tryed by waight) so catched, you may set it by for a stock to keepe. Take heed in any case the combs bee not broken, for then the other Bees will smell the hony, and spoyle them. This have I tryed to be very profitable for the saving of Bees. The instrument hath this forme. The great straight piece is wood,



the rest are iron claspes and nailes, the claspes are loose in the Stapes. Two men with two of these fastened to the hive, will easily turne it up.

They gather not till *Iuly*, for then they are discharged of their young, or else they are become now strong to labour, and now sap in flowers is strong and proud: by reason of time, and force of Sunne. And now also in the North (and not before) the hearbs of greatest vigour put their Flowers, as Beanes, Fennel, Burrage, Rape, &c.

The most sensible weather for them, is heat & drought

because the nesh Bee can neither abide cold or wet: and showres (which they wel fore-see) do interrupt their labours unlesse they fall on the night, and so they further them.

Droanes.

After casting time, you shall benefit your stocks much, if you helpe them to kill their Droanes, which by all probability and iudgement, are an idle kinde of Bees, and wastfull. Some say they breed and have seene young Droanes in taking their hony, which I know is true. But I am of opinion, that there are also Bees, which have lost their stings, and so being, as it were gelded, become idle and great. There is great use of them: *Deus, & natura nihil fecit frustra*. They hate the Bees, and cause them cast the sooner. They never come forth but when they be over heated. They never come home laden. After casting time, and when the Bees want meate, you shall see the labouring Bees fasten on them, two, or three, or four at once, as if they were theeves to be led to the gallows, and killing them, they cast out, and draw them far from home, as hatefull enemies. Our Housewife, if she be the Keeper of her owne Bees (as shee had need to bee) may with her bare hand in the heate of the day, safely destroy them in the hives mouth. Some use towards night, in a hot day, to set before the mouth of the hive a thin board, with little holes, in at which the lesser Bees may enter but not the Droanes, so that you may kill them at your pleasure.

Anoyances.

Snayles spoyle them by night like theeves: they come so quietly, and are so fast, that the Bees feare them not. Looke early and late, especially in a rainy or dewey evening or morning.

Mice are no lesse hurtfull, and the rather to hives of straw; and therefore coverings of straw draw them. They will

will in either at the mouth, or sheer themselves an hole.
The remedy is good Cats, Rats bane and watching.

The cleanly Bee hateth the smoke as poyson, therefore let your Bees stand neerer your garden then your Brew-house or Kitchen.

They say Sparrowes and Swallowes are enemies to Bees, but I see it not.

More hives perish by Winters cold, then by all other hurts: for the Bee is tender and nice, and onely lives in warme weather, and dyes in cold; And therefore let my Housewife be perswaded, that a warme dry house before described, is the chiefeest helpe shee can make her Bees against this, and many more mischiefes. Many use against cold in Winter, to stop up their hive close, and some set them in houses, perswading themselves, that therby they relieve their Bees. First, tossing and moving is hurtfull. Secondly, in houses, going, knocking, and shaking is noysome. Thirdly, too much heat in an house is unnaturall for them: but lastly, and especially, Bees cannot abide to bee stopt close up. For at every warme season of the Sunne they revive, and living eate, and eating must needes purge abroad, (in her house) the cleanly Bee will not purge her selfe. Iudge you what it is for any living creature, not to disburden nature. Being shut up in calme seasons, lay your eare to the Hive, and you shall heare them yarme and yell, as so many hungred prisoners. Therefore impound not your Bees, so profitable and free a creature.

Let none stand above three yeares, else the combes will be blacke and knotty, your honey will bee thinne and uncleanelly: and if any cast after three yeares, it is such as have swarmes, and old Bees kept altogether, which is great losse. Smoaking with ragges, rozen, or
brim-

Taking of bees

stone, many use : some use drowning in a tub of cleane water, and the water well brewd, will be good borchet. Draw out your spelkes immediately with a paire of pinchers, lest the wood grow soft and swell, and so will not be drawne, then must you cut your Hive.

Straining
Honey.

Let no fire come neere your hony, for fire softeneth the wax and drosse, and makes them runne with the hony. Fire softneth, weakneth, and hindreth hony for purging. Breake your combes small (when the dead empty combes are parted from the loaden combes into a sive, borne over a great bowle, or vessell, with two staves, and so let it runne two or three dayes. The sooner you run it up, the better will it purge. Runne your swarme hony by it selfe, and that shall be your best. The elder your hives are, the worse is your hony.

Vessels.

Vsuall vessels are of clay, but after wood bee satiated with honey (for it will leake at first : for honey is marvellously searching, the thicke, and therefore vertuous.) I use it rather, because it will not breake so soone, with fells, frosts, or otherwise, and greater vessels of clay will hardly last.

When you use your honey, with a spoone take off the skin which it hath put up.

And it is worth the regard, that bees thus used, if you have but forty stocks, shall yeeld you more commodity cleerely than forty acres of ground. And thus much may suffice, to make good Housewives love and have good Gardens and Bees.

Laus Deo.

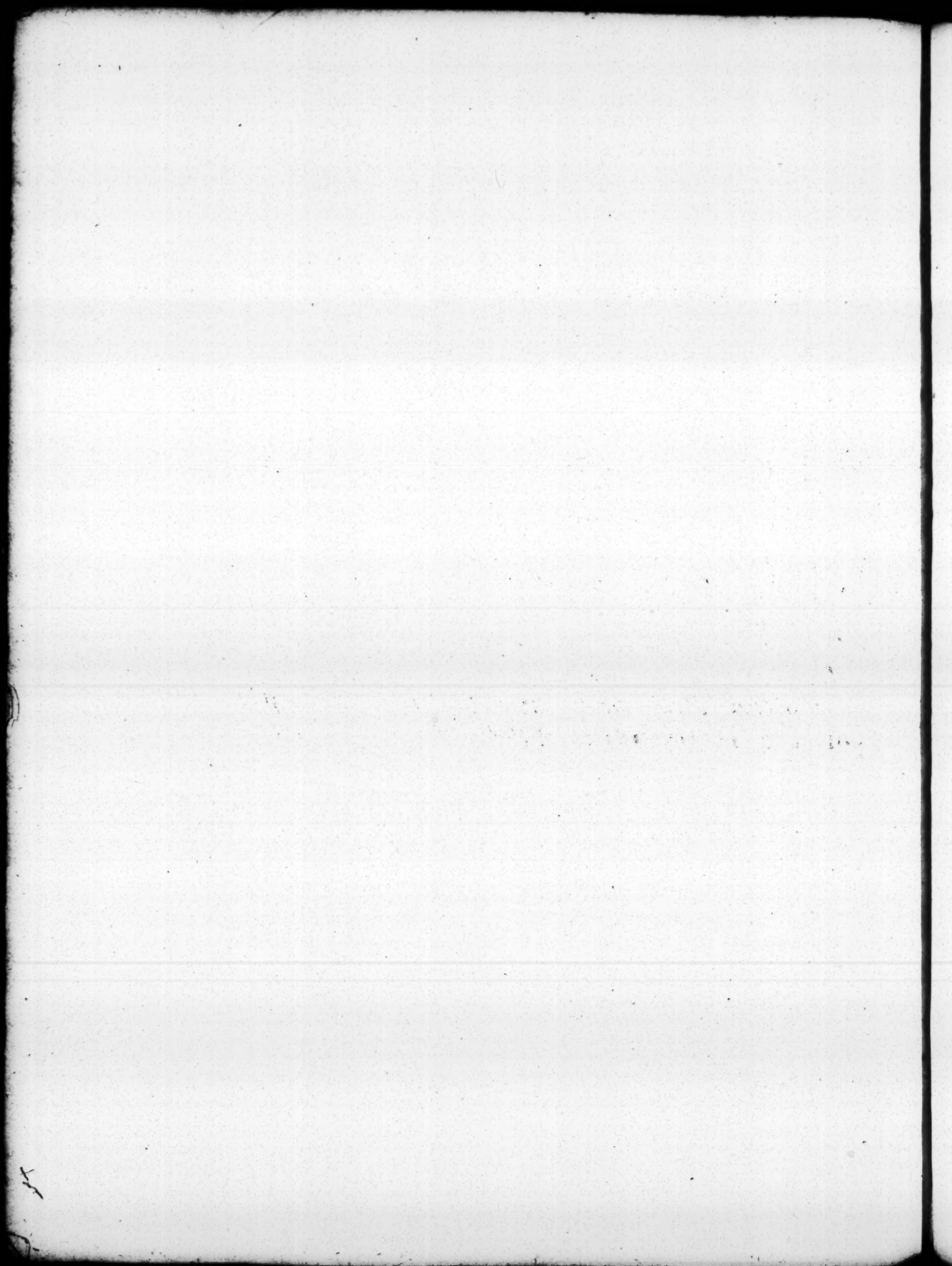
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A





A
MOST PROFITABLE
New Treatise, from approved ex-
perience of the Art of propa-
gating Plants;

By SIMON HARVARD.

CHAP. I.

The Art of propagating Plants.



Here are foure sorts of planting or pro-
pagating, as in laying of shootes or little
branches, whiles they are yet tender, in
some pit made at their foote, as shall be
said hereafter, or upon a little Ladder or
Basket of earth, tied to the bottome of
the branch, or in boaring a Willow thorow, and putting
the branch of the tree into the hole, as shall be fully de-
clared in the Chapter of grafting. .

There are likewise seasons to propagate in; but the
best is in the Spring, and *March*, when the trees are
in the Flower, and doe begin to grow lusty. The young
planted

I.

- planted Siens or little Grafts, must be propagated in the beginning of Winter, a foote deepe in the earth, and good manure mingled amongst the earth, which you shall cast forth of the pit, wherein you meane to propagate it, to tumble it in upon it againe. In like manner, your superfluous Siens, or little Plants must be cut close by the earth, when as they grow about some small Impe, which wee meane to propagate, for they would doe nothing but rot: For to propagate, you must digge the earth round about the tree, that so your rootes may be laid in a manner halfe bare. Afterward draw into length the pit on that side where you meane to propagate, and according as you perceive that the roots will be best able to yeeld, and be governed in the same pit, to use them, and that with all gentlenesse, and stop close your Siens, in such sort, as that the wreath which is in the place where it is grafted, may be a little lower than the Siens of the new Wood, growing out of the earth, even so high as it possible may be. If the trees that you would propagate be somewhat thicke, and thereby the harder to ply, and somewhat stiffe to lay in the pit: then you may wet the stocke almost to the midst, betwixt the roote and the wreathing place, and so with gentle handling of it, bow downe into the pit the wood which the grafts have put forth, and that in as round a compasse as you can, keeping you from breaking of it: afterward lay over the cut, with gummed Waxe, or with gravell and sand.
- 2.

CHAP. 2.

Grafting in the Barke.

Grafting in the Barke, is used from mid-*August* to the beginning of Winter, and also when the Westerne-winde beginneth to blow, being from the 7. of *February*, unto the 11. of *June*. But there must care be had, not to graffe in the barke in any rainy season, because it would wash away the matter of joyning the one and the other together, and so hinder it.

Grafting in the budde, is used in the Summer time, from the end of *May*, untill *August*, as being the time when the trees are strong and lusty, and full of sap and leaves. To wit, in a hot Countrey, from the midst of *June*, unto the midst of *July*: but in cold Countries, to the midst of *August*, after some small showers of Raine.

If the Summer be so exceeding dry, as that some trees doe withhold their sap, you must waite the time till it doe returne.

Graft from the full of the Moone, untill the end of the old.

You may graft in a Cleft, without having regard to the Raine, for the sap will keepe it off.

You may graft from mid *August*, to the beginning of *November*: Cowes dung with straw doth mightily preserve the graft.

It is better to graft in the evening, than the morning.

The furniture and tooles of a Grafter, are a Basket to lay his grafts in, Clay, Gravell, Sand, or strong Earth, to draw over the plants cloven: Mousse, Woollen

Woollen clothes, barks of Willow to joyne to the late things and earth before spoken, and to keepe them fast: Oziers to tye againe upon the barke, to keepe them firme and fast: gummed Wax, to dresse and cover the ends and tops of the grafts newly cut, that so the raine and cold may not hurt them, neither yet the sap rising from below, bee constrained to returne againe unto the shootes. A little Sawe or hand.Sawe, to sawe off the stocke of the plants, a little Knife or Penknife to graffe, and to cut and sharpen the grafts, that so the barke may not pill nor be broken; which often commeth to passe when the graft is full of sap. You shall cut the graffe so long, as that it may fill the cliffe of the plant, and therewithall it must be left thicker on the barke-side, that so it may fill up both the cliffe and other incisions, as any need is to be made, which must be alwaies well ground, well burnished without all rust. Two wedges, the one broad for thicke trees, the other narrow for lesse and tender trees, both of them of box, or some other hard and smooth wood, or steele, or of very hard iron, that so they may need lesse labour in making them sharpe.

A little hand-Bill to set the plants at more liberty, by cutting off superfluous boughs, helu'd of Iuory, Boxe, or Brasill.

CHAP. III.

Grafting in the cleft.

THe manner of grafting in a cleft, to wit, the stocke being clov'd, is proper not onely to trees, which are as great as a mans legs or armes, but also to greater. It is true that being trees cannot easily bee cloven in their stocke, that therefore it is expedient to make incision in some one of their branches, and not in the maine body, as wee see to bee practised in great Apple-trees, and great Peare-trees, and as we have already declared heretofore.

To graft in the cleft, you must make choyse of a graft that is full of sap and iuyce, but it must not bee, but till from after *Ianuary* untill *March*: And you must not thus graft in any tree that is already budded, because a great part of the iuyce and sap would bee already mounted up on high, and risen to the top, and there dispersed and scattered hither and thither, into every sprig and twig, and use nothing welcome to the graft.

You must likewise bee resolved not to gather your graft the day you graft in, but tenne or twelve dayes before: for otherwise, if you graft it new gathered, it will not bee able easily to incorporate it selfe with the body and stocke, where it shall be grafted; because that some part of it will dry, and by this meanes will bee a hindrance in the stocke to the rising up of the sap, which it should communate unto the graft, for the making of it to put forth, and whereas this dried part will fall a crumbling, and breaking thorow his rottenesse, it will cause to remaine a concavity, or hollow place in the stock, which will be an occasion of a like inconvenience

to befall the graft. Moreover, the graft being new and tender, might easily be hurt of the bands, which are of necessity to be tyed about the Stocke, to keepe the graft firme and fast. And you must further see, that your Plant was not of late removed, but that it have already fully taken root.

7. When you are minded to graft many grafts into one cleft, you must see that they be cut in the end all alike.

See that the grafts be of one length, or not much differing, and it is enough, that they have three or foure eylets without the wrench: when the Plant is once sawed, and lopped of all his small Siens and shootes round about, as also implied of all his branches, if it have many: then you must leave but two at the most, before you come to the cleaving of it: then put to your little Saw, or your knife, or other edged toole that is very sharpe, cleave it quite thorow the middest, in gentle and soft sort: First, tying the Stocke very sure, that so it may not cleave further then is need: and then put to your Wedges into the cleft untill such time as you have set in your grafts, and in cleaving of it, hould the knife with the one hand, and the tree with the other, to helpe to keepe it from cleaving too farre. Afterwards put in your wedge of Boxe or Brazill, or bone at the small end, that so you may the better take it out againe, when you have set in your grafts.

8. If the Stocke be cloven, or the Barke loosed too much from the wood: then cleave it downe lower, and set your grafts in, and looke that their incision bee fit, and very iustly answerable to the cleft, and that the two saps, first, of the Plant and graft, be right and even set one against the other, and so handsomely fitted, as
that

that there may not be the least appearance of any cut or cleft. For if they doe not thus iumpe one with another, they will never take one with another, because they cannot worke their seeming matter, and as it were cartilaginous glue in convenient sort or manner, to the gluing of their ioynts together. You must likewise beware, not to make your cleft overthwart the pitch, but somewhat aside.

The barke of your Plant being thicker then that of your Graft, you must set the graft so much the more outwardly in the cleft, that so the two saps may in any case be ioyned, and set right the one with the other, but the rinde of the plant must be somewhat more out, then that of the grafts on the cloven side.

To the end that you may not faile of this worke of imping, you must principally take heed, not to over-cleave the Stockes of your Trees. But before you widen the cleft of your wedges, binde, and goe about the Stocke with two or three turnes, and that with an Ozier, close drawne together, underneath the same place, where you would have your cleft to end, that so your Stocke cleave not too farre, which is a very usual cause of the miscarrying of grafts, in as much as hereby the cleft standeth so wide and open, as that it cannot be shut, and so not grow together againe; but in the meane time spendeth it selfe, and breatheth out all his life in that place, which is the cause that the Stocke and the Graft are both split. And this falleth out most often in Plum-trees, & branches of trees. You must be careful so to ioyne the rinds of your grafts, and Plants, that nothing may continue open, to the end that the wind, moisture of the clay or rain, running upon the grafted place, do not get in: when the plant cleaveth very

straight, there is not any danger nor hardnesse in sloping downe the Graft. If you leave it somewhat uneven, or rough in some places, so that the saps both of the one and of the other may the better grow, and be glued together, when your grafts are once well ioyned to your Plants, draw out your wedges very softly, lest you displace them againe, you may leave there within the cleft some small end of a wedge of greene wood, cutting it very close with the head of the Stocke : Some cast give into the cleft, some sugar, and some gummed Wax.

If the Stocke of the Plant whereupon you intend to graft, bee not so thicke as your graft, you shall graft it after the fashion of a Goats foot, make a cleft in the Stocke of the Plant, not direct, but byas, and that smooth and even, not rough : then apply and make fast thereto, the graft with all his Barke on, and answering to the barke of the Plant. This being done, cover the place with the fat earth and mosse of the Woods tyed together with a strong band: sticke a pole of Wood by it, to keepe it stedfast.

CHAP. IV.

Grafting like a Scutcheon.

IN grafting after the manner of a Scutcheon, you shall not vary nor differ much from that of the Flute or Pipe, save only that the Scutcheon-like graft having one eye-let, as the other hath, yet the wood of the tree whereupon the Scutcheon-like graft is grafted, hath not any knob, or budde, as the wood whereupon the graft is grafted,

ted, after the manner of a pipe.

In Summer when the trees are well replenished with sap, and that their new Siens beginne to grow somewhat hard, you shall take a shoote at the end of the chiefe branches of some noble and reclaimed tree, whereof you would faine have some fruite, and not many of his old store or wood, and from thence raise a good eylet, the taile and all thereof to make your graft. But when you choose, take the thickest, and grossest, divide the tayle in the middest, before you doe any thing else, casting away the leafe (if it be not a Peare plum-tree : for that would have two or three leaves) without removing any more of the said tayle : afterward with the point of a sharpe knife, cut off the Barke of the said shoote, the patterne of a shield, of the length of a nayle.

12.

In which there is onely one eylet higher then the middest together, with the residue of the tayle which you left behinde : and for the lifting up of the said graft in Scutcheon, after that you have cut the barke of the shoote round about, without cutting of the wood within, you must take it gently with your thumbe, and in putting it away, you must presse upon the wood from which you pull it, that so you may bring the bud and all away together with the Scutcheon : for if you leave it behinde with the wood, then were the Scutcheon nothing worth. You shall finde out if the Scutcheon be nothing worth, if looking within when it is pulled away from the wood of the same sute, you finde it to have a hole within, but more manifestly, if the bud doe stay behinde in the Wood, which ought to have beene in the Scutcheon.

13.

Thus your Scutcheon being well raised and taken

14. off, hold it a little by the taile betwixt your lips, without wetting of it, even untill you have cut the Barke of the tree where you would graft it, and looke that it be cut without wounding of the wood within, after the manner of a crutch, but somewhat longer then the Scutcheon that you have to set in it, and in no place cutting the wood within; after you have made incision, you must open it, and make it gape wide on both sides, but in all manner of gentle handling, and that with little Sizers of bone, and separating the wood and the barke a little within; even so much as your Scutcheon is in length and breadth: you must take heede that in doing hereof, you doe not hurt the barke.

15. This done take your Scutcheon by the end, and your tayle which you have left remaining, and put into your incision made in your tree, lifting up softly your two sides of the incision with your said Sizers of bone, and cause the said Scutcheon to joyne, and lye as close as may be, with the wood of the tree, being cut, as aforesaid, in waighing a little upon the end of your rinde: so cut and let the upper part of your Scutcheon lye close unto the upper end of your incision, or barke of your said tree: afterward binde your Scutcheon about with a band of Hempe, as thicke as a pen of a quill, more or lesse, according as your tree is small or great, taking the same Hemp in the middest, to the end that either part of it may performe a like service; and wreathing and binding of the said Scutcheon into the incision of a tree, and it must not be tyed too strait, for that would keepe it from taking the joyning of the one sap to the other, being hindered thereby, and neither the Scutcheon, nor yet the Hempe must bee moist or wet: and the more justly to binde them together, begin at the back side of the Tree,
right

right over against the middest of the incision, and from thence come forward to joyne them before, above the eylet and tayle of the Scutcheon, crossing your band of Hempe, so oft as the two ends meet, and from thence returning backe againe, come about and tye it likewise underneath the eylets: and thus cast about your band still backward and forward, untill the whole cleft of the incision be covered above and below with the said Hempe, the eylet onely excepted, and his tayle which must not bee covered at all; his tayle will fall away one part after another, and that shortly after the ingrafting, if so bee the scutcheon will take. Leave your trees and Scutcheons thus bound, for the space of one month, and the thicker, a great deale longer time. Afterward looke them over, and if you perceive them to grow together untye them, or at the least wise cut the Hempe behinde them, and leave them uncovered. Cut also your branch two or three fingers above that, so the impe may prosper the better: and thus let them remaine till after Winter, about the month of *March*, and *Aprill*.

If you perceive that your budde of your scutcheon doe swell and come forward, then cut off the tree three fingers or thereabouts, above the Scutcheon: for if it bee cut off too neere the Scutcheon, at such time as it putteth forth his first blossome, it would bee a meanes greatly to hinder the flowring of it, and cause also that it should not thrive and prosper so wel after that one yeere is past, and that the shoote beginneth to be strong: beginning to put forth the second bud and blossome, you must goe forward to cut off in by-as wise the three fingers in the top of the tree, which you left there, when you cut it in the yeere going before, as hath beene said.

19.

When your shoote shall have put forth a great deale of length, you must sticke downe there, even hard joyned thereunto, little stakes, tying them together very gently and easily; and these shall stay your shootes and prop them up, letting the winde from doing any harme unto them. Thus you may graft white Roses in red, and red in white. Thus you may graft two or three Scutcheons: provided that they be all of one side: for they will not bee set equally together in height, because then they would be all starvelings, neither would they be directly

20.

one over another; for the lower would stay the rising up of the sap of the tree, and so those above should consume in penury, and undergoe the aforesaid inconvenience. You must note, that the Scutcheon which is gathered from the Sien of a tree whose fruit is soure, must bee cut in square forme, and not in the plaine fashion of a Scutcheon. It is ordinary to graffe the sweet Quince tree, bastard Peach-tree, Apricocke-tree, Iviube-tree, sowre Cherry-tree, sweet Cherry-tree, and Chestnut-tree, after this fashion, howbeit they might be grafted in the cleft more easily, and more profitably; although divers be of contrary opinion, as thus best: Take the grafts of sweet Quince-tree, and bastard Peach-tree, of the fairest wood, and best fed that you can finde growing upon the wood of two yeeres old, because the wood is

21.

not so firme nor solid as the others: and you shall graffe them upon small Plum-tree stockes, being of the thickenesse of ones thumb; these you shall cut after the fashion of a Goates foot: you shall not goe about to make the cleft of any more sides then one, being about a foot high from the ground; you must open it with your small wedge: and being thus grafted, it will seeme to you that it is open but of one side; afterward you shall wrap it up
with

with a little Mosse, putting thereto some gummed Waxe, or clay, and binde it up with Oziers, to keep it surer, because the stocke is not strong enough it selfe to hold it, and you shall furnish it every manner of way, as others are dealt withall: this is most profitable.

The Time of Grafting.

All moneths are good to graft in, (the moneth of *October* and *November* onely excepted) But commonly, graft at that time of the Winter, when sap beginneth to arise.

In a cold Countrey graft later, and in a warme Countrey earlyer.

The best time generally is from the first of *February* untill the first of *May*.

The grafts must alwayes be gathered, in the old of the Moone.

For grafts choose shootes of a yeare old, or at the furthest most two yeeres old.

If you must carry grafts farre, pricke them into a Turnep newly gathered, or lay earth about the ends.

If you set stones of Plummes, Almonds, Nuts, or Peaches: First let them lye a little in the Sunne, and then steepe them in Milke or Water, three or foure dayes before you put them into the earth.

Dry the kernels of Pippins, and sow them in the end of *November*.

The stone of a Plum-tree must bee set a foot deepe in *November*, or *February*.

The Date-stone must bee set the great end downwards

wards, two cubits deepe in the earth, in a place enriched with dung.

The Peach-stone would bee set presently after the Fruit is eaten, some quantity of the flesh of the Peach remayning about the stone.

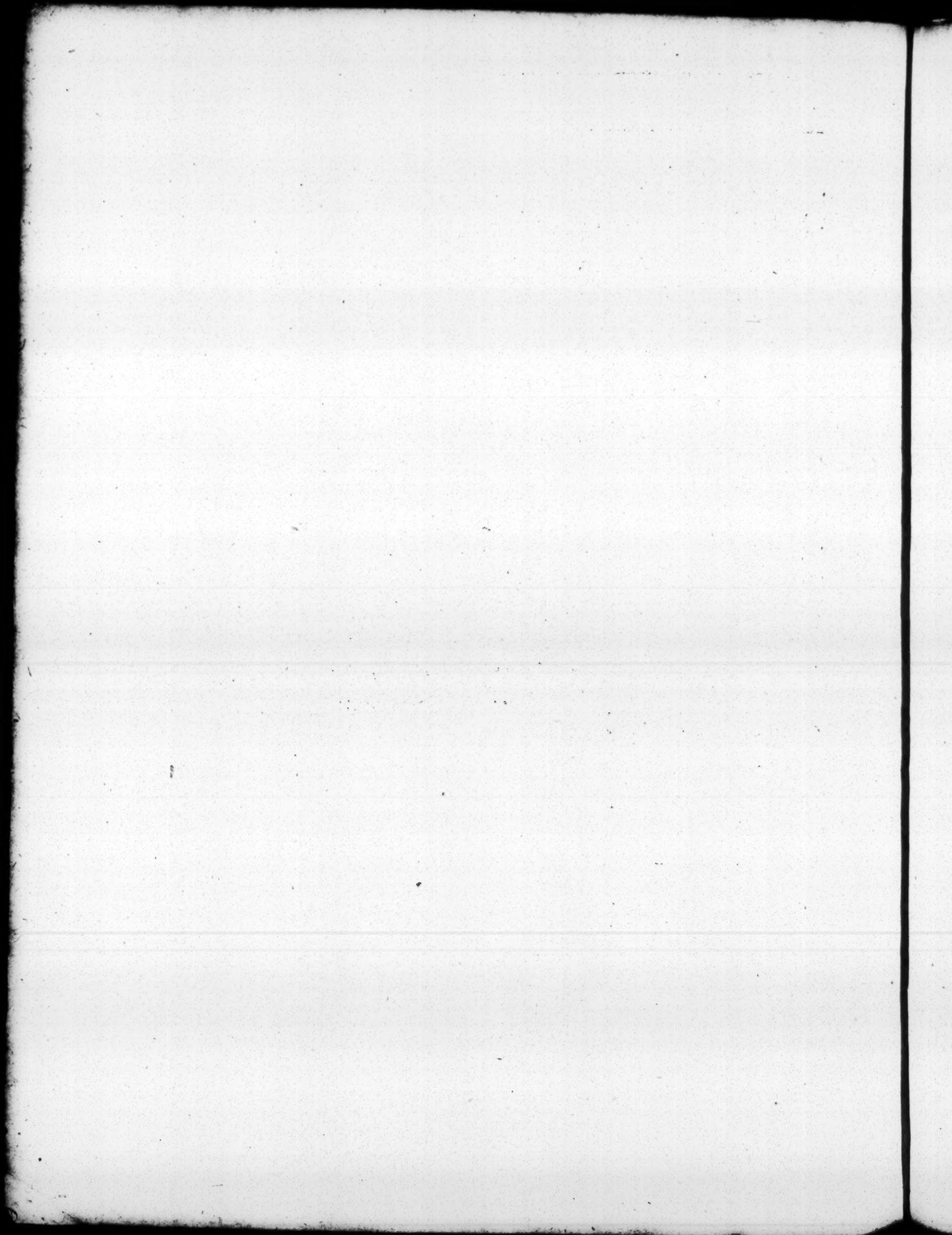
If you will have it to be excellent, graft it afterward upon an Almond tree.

The little Siens of Cherry-trees, 'growne thick with haire, rots, and those also which doe grow up from the rootes of the great Cherry-trees, being removed, doe grow better and sooner then they which come of stones: but they must bee removed and planted while they are but two or three yerres old, the branches must be lopped.



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THE
HUSBAND MANS
FRUITFULL ORCHARD.

For the true ordering of all sorts of
Fruites in their due seasons: and how double in-
crease commeth by care in gathering yeare
after yeare: as also the best way of carriage by
land or by water, with their preser-
vation for longest continuance.



Ofall stone Fruit, Cherries are the first Cherries.
to be gathered: of which, though
we reckon foure sorts; *English*, *Fle-
mish*, *Gascogne* and *Blacke*, yet are
they reduced to two, the early, and
the ordinary: the early are those
whose grafts came first from *France*
and *Flanders*, and are now ripe with us in *May*: the ordi-
nary is our owne naturall Cherry, and is not ripe before
June, they must be carefully kept from Birds, either with
nets,

nets, noise, or other industry.

Gathering
of Cherries.

They are not all ripe at once, nor may be gathered at once, therefore with a light Ladder, made to stand of it selfe, without hurting the boughes, mount to the tree, and with a gathering hooke, gather those which be full ripe, and put them into your Cherry-pot, or Kybzey hanging by your side, or upon any bough you please, and be sure to breake no stalke, but that the cherry hanges by; and pull them gently, lay them downe tenderly, and handle them as little as you can.

To carry
Cherries.

For the conveyance or portage of Cherries, they are best to be carried in broad Baskets like fives, with smooth yeelding bottomes, only two broad laths going along the bottome: and if you doe transport them by ship, or boat, let not the fives be filled to the top, lest setting one upon another, you bruise and hurt the Cherries: if you carry by horse-backe, then panniers well lined with Earne, and packt full and close is the best and safest way.

Other stone-
fruit.

Now for the gathering of all other stone-fruit, as Nertarines, Apricockes, Peaches, Peare-plumbes, Damsons, Bullas, and such like, although in their several kinds, they seem not to be ripe at once on one tree: yet when any is ready to drop from the tree, though the other seeme hard, yet they may also be gathered, for they have received the full substance the tree can give them; and therefore the day being faire, and the dew drawne away; set up your Ladder, and as you gathered your Cherries, so gather them: onely in the botomes of your large fives, where you part them, you shall lay Nettles, and likewise in the top, for that will ripen those that are most unready.

In gathering of Peares are three things observed:

to

to gather for expence, for transportation, or to sell to the Apothecary. If for expence, and your owne use, then gather them as sone as they change, and are as it were halfe ripe, and no more but those which are changed, letting the rest hang till they change also: for thus they will ripen kindly, and not rot so soone, as if they were full ripe at the gathering. But if your Peares be to be transported farre either by Land or Water, then pull one from the tree, and cut it in the midst, and if you finde it hollow about the choare, and the kernell a large space to lye in: although no Peare be ready to drop from the tree, yet then they may bee gathered, and then laying them on a heape one upon another, as of necessity they must be for transportation, they will ripen of themselves, and eat kindly: but gathered before, they will wither, shrink and eate rough, losing not onely their tast, but beauty.

Gathering of
Peares.

Now for the manner of gathering; albeit some climb into the trees by the boughes, and some by Ladder, yet both is amisse: the best way is with the Ladder before spoken of, which standeth of it selfe, with a basket and a line, which being full, you must gently let downe, & keeping the string still in your hand, being emptied, draw it up againe, and so finish your labour, without troubling your selfe, or hurting the tree.

Now touching the gathering of Apples, it is to be done according to the ripening of the fruit; your Summer apples first, and the Winter after.

Gathering of
Apples.

For Summer fruit, when it is ripe, some will drop from the tree, and birds will be picking at them: But if you cut one of the greenest, and finde it as was shew'd

shew'd you before of the Peare : then you may gather them, and in the house they will come to their ripenesse and perfection. For your Winter fruit, you shall know the ripenesse by the observation before shewed ; but it must be gathered in a faire, Sunny, and dry day, in the waine of the Moone, and no Wind in the East, also after the deaw is gone away : for the least wet or moysture will make them subiect to rot and mildew : also you must have an apron to gather in, and to empty into the great baskets, and a hooke to draw the boughes unto you, which you cannot reach with your hands at ease : the apron is to be an Ell every way, loopt up to your girdle, so as it may serve for either hand without any trouble : and when it is full, unloose one of your loopes, and empty it gently into the great basket, for in throwing them downe roughly, their owne stalkes may pricke them ; and those which are prickt, will ever rot. Againe, you must gather your fruit cleane without leaves or brunts, because the one hurts the tree, for every brunt would be a stalke for fruit to grow upon : the other hurts the fruit by brusing ; and pricking it as it is layd together, and there is nothing sooner rotteth fruit, then the greene and withered leaves lying amongst them ; neither must you gather them without any stalke at all : for such fruit will begin to rot where the stalke stood.

To use the fallings.

For such fruit as falleth from the trees, and are not gathered, they must not be layd with the gathered fruit : and of fallings there are two sorts ; one that falls through ripenesse, and they are best, and may be kept to bake or roast : the other windfals, and before they are ripe ; and they must be spent as they are gathered, or else they will wither and come to nothing : and there-

therefore it is not good by any meanes to beate downe fruit with Poales, or to carry them in carts loose and jogging, or in sacks where they may be bruised.

When your fruit is gathered, you shall lay them in ^{Carriage of fruit.} deepe Baskets of Wicker, which shall containe foure or fixe bushels, and so betweene two men, carry them to your Apple-Loft, and in shooting or laying them down, be very carefull that it be done with all gentlenesse, and leasure, laying every sort of fruit severall by it selfe: but if there be want of roome, having so many sorts that you cannot lay them severally, then such some fruit as is neere in taste and colour, and of Winter fruit, such as will taste alike may if neede require, be laide together, and in time you may separate them, as shall be shewed hereafter. But if your fruit be gathered far from your Apple-Loft, then must the bottomes of your Baskets be lined with greene Ferne, and draw the stubborne ends of the same through the Basket, that none but the soft leafe may touch the fruit, and likewise cover the tops of the Baskets with Ferne also, and draw small cords over it, that the Ferne may not fall away, nor the fruit scatter out, or jogge up and down: and thus you may carry fruit by Land or by Water, by Boat or Cart, as farre as you please: and the Ferne doth not onely keepe them from bruising, but also ripens them, especially Peares. When your fruit is brought to your Apple-Loft, or store-house, if you finde them not ripened enough, then lay them in thicker heapes upon Ferne, and cover them with Ferne also: and when they are neere ripe, then uncover them, and make the heapes thinner, so as the ayre may passe thorow them: and if you will not hasten the ripening of them, then lay them on the boards without any Ferne at all. Now for Winter, or long lasting Peares, they may be

packt either in Ferne or Straw, and carryed whether you please; and being come to the journeyes end, must be laid upon sweet straw; but beware the room be not too warm nor windy, & too cold, for both are hurtful; but in a temperate place where they may have aire, but not too much.

Of Wardens.

Wardens are to be gathered, carried, pack't, and laid as Winter Peares are.

Of Medlers.

Medlers are to be gathered about Michaelmas, after a frost hath toucht them; at which time they are in their full growth, and will then bee dropping from the tree, but never ripe upon the tree. When they are gathered, they must be laid in a basket, five, barrell, or any such caske, and wrapt about with woollen cloths, under, over, and on all sides, and also some weight laid upon them, with a board between: for except they be brought into a heat, they will never ripen kindly or taste well.

Now when they have laine till you thinke some of them be ripe, the ripest, still as they ripen, must be taken from the rest: therefore poure them out into another five or basket leasurely, that so you may well finde them that be ripest, letting the hard one fall into the other basket, and those which be ripe laid a side: the other that be halfe ripe, sever into a third five or basket: for if the ripe and halfe ripe be kept together, the one will be mouldy, before the other be ripe: And thus do till all be thoroughly ripe.

Of Quinces.

Quinces should not be laid with other fruite; for the sent is offensive both to other fruite, and to those that keepe the fruite or come amongst them: therefore lay them by themselves upon sweet straw, where they may have ayre enough: they must be packt like Medlers, and gathered with Medlers.

Apples must be packt in Wheat or Rye-straw, and in maunds

maunds or baskets lyned with the same, and being gently handled, will ripen with such packing and lying together. If severall sorts of apples be packt in one maund or basket, then betweene every sort, lay sweet straw of a pretty thickenesse.

To packe Apples.

Apples must not bee powred out, but with care and leasure: first, the straw pickt cleane from them, and then gently take out every severall sort, and place them by themselves: but if for want of roome you mixe the sorts together, then lay those together that are of equall lasting; but if they have all one taste, than they need no separation. Apples that are not of like colours should not be laid together, and if any such be mingled, let it bee amended, and those which are first ripe, let them be first spent; and to that end, lay those apples together, that are of one time of ripening: and thus you must use Pippins also, yet will they endure bruises better then other fruit, and whilst they are greene will heale one another.

Emptying and laying Apples.

Pippins though they grow of one tree, and in one ground, yet some will last better then other some, and some will bee bigger then others of the same kinde, according as they have more or lesse of the Sunne, or more or lesse of the droppings of the trees or upper branches: therefore let every one make most of that fruit which is fairest, and longest lasting. Againe, the largenesse and goodnesse of fruit consists in the age of the tree: for as the tree increaseth, so the fruite increaseth in bignesse, beauty, taste, & firmenes: and otherwise, as it decreaseth.

Difference in Fruit.

If you be to transport your fruit far by water, then provide some dry hogs-heads or barrells, and packe in your apples, one by one with your hand, that no empty place may be left, to occasion sogging; and you must line your vessell at both ends with fine sweet straw; but not the

Transporting fruit by water.

sides, to a voyd heate: and you must bore a dozen holes at either end, to receive ayre so much the better; and by no meanes let them take wet. Some use that transport beyond the seas, to shut the fruit under hatches upon straw: but it is not so good, if caske may be gotten.

When not to
transport fruit.

It is not good to transport fruit in *March*, when the wind blowes bitterly, nor in frosty weather, neither in the extreame heate of Summer.

To convey
small store of
fruit.

If the quantity bee small you would carry, then you may carry them in Dossers or Panniers, provided they be ever filled close, and that Cherries and Peares bee lined with greene Fearn, and Apples with sweet straw: and that, but at the bottomes and tops, not on the sides.

Roomes for
fruit.

Winter fruit must lye neither too hot, nor too cold; too close, nor too open: for all are offensive. A low roome or Cellar that is sweet, and either boarded or paved, & not too close, is good, from *Christmas* till *March*: and roomes that are sieled over head, and from the ground, are good from *March* till *May*: then the Cellar againe, from *May* till *Michælmas*. The apple-loft would be sieled or boarded, which if it want, take the longest Rye-straw, and rayse it against the walles, to make a fence as high as the fruit lyeth; and let it be no thicker then to keep the fruit from the wall, which being moyst, may doe hurt, or if not moist, then the dust is offensive.

Sorting of
fruit.

There are some fruit which will last but untill *Allbolontide*, they must be laid by themselves, then those which will last till *Christmas*, by themselves; then those which will last till it bee *Candlemas*, by themselves; those that will last till *Shrovetide*, by themselves; and Pippins, Apple-Iohns, Peare-maines, and Winter-Russetings, which will last all the yeare, by themselves.

Now if you spy any rotten fruit in your heapes, pick them

them out, and with a Trey for the purpose, see you turne the heapes over, and leave not a tainted apple in them, dividing the hardest by themselves, and the broken skinned by themselves to be first spent, and the rotten ones to be cast away; & ever as you turne them: & pick them, under-lay them with fresh straw: thus shall you keep them safe for your use, which otherwise would rot suddenly. Times of str-
ring fruit.

Pippins, Iohn Apples, Peare-maines, and such like long lasting fruit, need not to be turned till the week before *Christmas*, unlesse they be mixt with other of a riper kinde, or that the fallings be also with them, or much of of the first straw left amongst them: the next time of turning is at *Shrove-tide*, and after that, once a moneth till *Whitsontide*; and after that, once a fortnight; and ever in the turning, lay your heapes lower and lower, and your straw very thinne: provided you doe none of this labour in any great frost, except it be in a close Celler. At every thaw, all fruit is moyst, and then they must not be touched: neither in rainy weather, for then they will be danke also: and therefore at such seasons it is good to set open your windowes, and doores, that the ayre may have free passage to dry them, as at nine of the clocke in the fore-noone, in Winter; and at fixe in the fore-noone, and at eight at night in Summer: onely in *March*, open not your windowes at all.

All lasting fruit, after the middest of *May*, beginne to wither, because then they waxe dry, and the moysture gone, which made them looke plumpe: they must needs wither, and be smaller; and nature decaying, they must needs rot. And thus much touching the ordering of fruit.

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All the Commandments of the Lord are pure

By keeping them men keep their souls secure.

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In the Book of the Lord. (St. Mark 12:17)

All the Commandments
of the Lord are pure
and from which the Lord
saves the soul.

